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FINALLY, UML 2.0 SEEMS FINAL

Hurdles over architectural alignment cleared, OMG task force expected to back proposal

BY DAVID RUBINSTEIN

After three years of work, including gathering requirements and building consensus, the Analysis and Design Platform Task Force of Object Management Group Inc. is set to UML 2.0 has finalize version 2.0 of taken its final the Unified Modeling form, says Language specification OMG's Siegel. that is expected to lead to the creation of a new generation of tools that bring together modeling and requirements management within a component-based development

The task force is scheduled to vote at an OMG technical



er submissions. "We're moving toward the endgame," Kobryn said. "It's taken longer than any of us would like, but we have broadbased support" within OMG's membership. Kobryn explained that much of the delay has

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meeting March 24 in

Orlando, Fla., to recom-

mend the submission by

a group called U2 Part-

ners, which has the

broadest support behind

it. While other submis-

sions remain active, task

force co-chairman Cris

Kobryn of Telelogic Inc.

said there is little activi-

ty going on with the oth-

BEA Upgrades Java Software, All Versions 8.1

Company presents unified platform

BY ALAN ZEICHICK

BEA Systems Inc. last week was expected to unveil upgrades to its Java server software, focusing on selling the software as a unified, integrated platform, at its eWorld user

conference in Orlando, Fla. The products affected include BEA's WebLogic application server, enterprise portal, integration server and the WebLogic Workshop development tool.

As part of the upgrade plan, BEA has set all of the version numbers of these products to 8.1. BEA's integrated suite, WebLogic Platform, also is now called 8.1.

According to Scott Dietzen, BEA's chief BEA's new platform technology officer, the has CTO Dietzen all company is using the bobble-headed.

new product numbering to communicate interoperability. "We want it all to have one release number. It's no good if people ask, 'Does WebLogic Server 8.1 work with Portal 4.3, with Integration 2.7?' You need

> to unify on the single numbering scheme."



The new version, Dietzen said, also in-► continued on page 12



VersionOne Rolls Out First Version of Project Manager

Framework targets agile development

BY DAVID RUBINSTEIN

Hoping to take agile development processes into large development shops, Silicon Valley company VersionOne LLC has released a new framework for managing projects built under those processes.

"Methodology is a unique business process from organization to organization," said VersionOne's president and cofounder, Robert Holler. "But they all need to respond quickly to changes in business rules, and

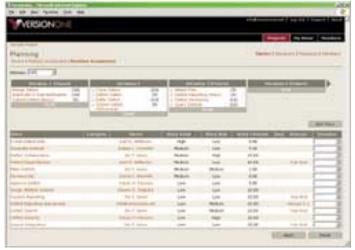
traditional software development limits their ability to respond."

VersionOne (www.versionone .net) is targeting development shops that already do agile projects in small groups and want

to scale up, but also wants to help others down the agile path "without scaring the hell out of them," said Holler. "We don't want to overburden people. We want to help them deploy agile and iterative development practices without losing control of the software development efforts."

The framework, called V1 Enterprise, helps bring developers, testers, marketers and

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V1 Enterprise helps track progress of projects using any agile methodology.

J2ME WEB SERVICES SET FOR SUMMER

BY EDWARD J. CORREIA

Java-based Web services soon will be extended from the server down to mobile devices. Java Specification Request 172, which defines a method for Web services consumption on J2ME devices, in late February got the nod from its Java Community Process expert group, clearing the way for public review of the specification.

According to a spokesman at Sun Microsystems Inc., the final specification and compliance kit are on track to be generally available by summer.

Nachi Periakaruppan, senior product manager of wireless Java technologies with Sun's Consumer and Mobile Systems Group, said the specs extend the Web services platform

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AltoWeb Moves Toward J2EE Compliance

Version 3.0 of application platform uses Apache's Struts framework, adds O/R mapping

BY ALAN ZEICHICK

AltoWeb Inc. this week is launching a major update of its AltoWeb Enterprise Application Platform, now renamed Xpi, for eXtreme Production and Integration server.

AltoWeb claims that Xpi 3.0 offers better compliance with J2EE specifications, a new visual design tool, and integration with Borland's JBuilder IDE. The new release also uses the open-source Castor API for Java Data Object-based object-relational mapping, and uses Struts Web application framework.

"This is a significant leap, in terms of not only where we've been, but also where we believe that [BEA's WebLogic] Workshop and M7 and a lot of the other players in our market are," claimed Katherine Barnhisel, vice president of marketing at AltoWeb (www.altoweb.com).

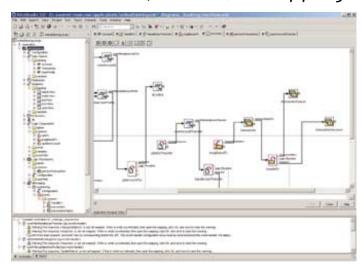
"The problem we're addressing is that J2EE is just difficult," she continued. "We're finding that our customers might have a few hundred Java developers, and of those Java developers, there are maybe a dozen that are J2EE experts. Those experts are overwhelmed just trying to maintain the applications they already have, or trying to deliver against the backlog of J2EE applications that need to be written."

Thus the need for Xpi, she said, as it allows Java developers to create complex server applications without seeing all the J2EE complexity. The platform consists of a visual development tool and runtime framework that let developers assemble loosely coupled J2EE applications.

Barnhisel admitted that this release was addressing core deficiencies in its version 2.8 predecessor. "I'm going to be upfront: With the last version, we would have had more traction had it been more J2EE compliant. Version 3 is 100 percent J2EE compliant, both on the design-time and runtime side, and the code that it generated is standard Java code. The whole platform is a standard implementation," she said.

The benefit, she said, is that with Xpi's visual assembly tool, "it's a lot easier to bring in the code that you've got. It's very simple, compared to the last version."

Steve Wilkes, AltoWeb's principal technologist, explained that in version 2.8, "we were using internal AltoWeb structures for moving data around. Now, we're relying entirely on JavaBeans, and we deploy applications through a standard EAR file." The runtime framework is



AltoWeb's new visual debugger links pieces of Java code into J2EE apps.

included in the EAR file.

Also, said Barnhisel, Xpi now abstracts the company's IDE layer of AltoStudio, the company's visual assembly tool. Although AltoWeb will continue shipping its own IDE with Xpi, "you can now insert any IDE into that layer. The first one we've integrated is JBuilder, but we will also be doing [Sun's] NetBeans and [IBM's] WebSphere Studio. That gives developers a seamless

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MKS Sticks to Its Knitting: Enterprise SCM

SCM vendor sees opportunities after Rational, Starbase acquisitions

BY ALAN ZEICHICK

They're small fish in a mediumsized pond—and two big new fish have entered the water.

MKS Inc., which started as a programming utilities company, today is best known for Source Integrity, its software configuration management server, and Integrity Manager, which adds process management and workflow to the SCM functions. But MKS isn't alone in its market: its two biggest rivals were Rational Software Corp., newly purchased by IBM Corp., and Starbase Corp., which was gobbled up by Borland Software Corp.

You'd think that Philip Deck, MKS' chairman and CEO, would be nervous about his company's future. Competing against IBM and Borland at the same time would be a daunting task for a niche player that has suffered from historically poor financial performance. Yet Deck believes that his company's small size and direct relationship with its customers will create plenty of opportunities in the SCM market.

Partially, that's because Deck, who took the helm in January 2001, has refocused the company from programmers' utilities to enterprise applications. "We're hitting an important milestone in that—profitability," he said. "We're growing our enterprise business very quickly, at something like a 75 percent annual rate of growth in new licensing. Some people would say that it's a rotten market out there, and you might agree if you looked at our declining desktop businesses. But our enterprise business is doing nicely."

Profitability is long overdue for MKS (www.mks.com). "Two years ago, we were in desperate straits, but we did some financing and cleaned up the company." Deck expects earnings of US\$32 million this year, with \$7 million cash in the bank.

Deck said that the key to MKS' future is expanding its SCM offerings to focus even more heavily on process. "What's driving our success, and our

profitability, is that we let our customers not only have a flexible process, and set up whatever process that they want," he claimed, "but then drive everything they do around that development process, and enforce it.

"Process goes from the beginning of requirements to the final deployment," Deck continued. "If [customers] can get one product that spans that divide, then they can pick and choose between other tools. We want to make sure they can leverage existing investments in a lot of other different tools, and make sure they integrate well into our system."

That means, specifically, that MKS will remain focused on SCM. That's unlike IBM/Rational and Borland/Starbase, which provide many other tools as well as SCM solutions. "There are a lot of places in the market we never intend to be. Testing, modeling, IDEs—we'll never have products there, and we don't need to. There's infinite growth in selling the appli-

► continued on page 18

SUN'S ORION REVAMPS SOFTWARE PRICING

BY ALAN ZEICHICK

Is Sun Microsystems Inc. gearing up for a price war with Microsoft Corp.? That seems to be the plan, based on Sun's forthcoming move to not only integrate its server applications more closely with Solaris and Linux, but also introduce a "predictable licensing" scheme that undercuts Microsoft's server software by 50 percent.

In late February, Jonathan Schwartz, Sun's executive vice president of software, unveiled Project Orion, a plan to tie Sun's server-side application stack into 64-bit and 32-bit Solaris and 32-bit Linux, bringing together the Sun ONE application server, directory server, messaging server, portal server, instant messaging and other tools. Those products will be updated and released on a quarterly basis, along with a version of Sun ONE Studio linked to each release's added functionality.

The big difference from previous offerings is that the integration will be tighter, bringing together a simplified installation and administrative procedure, and ultimately, functional integration as well. Schwartz said that in the future, adding a new user to the directory might

automatically provision portal access and an e-mail account, for example.

While the integration of the software moves Sun along a well-known path, the centerpiece of Project Orion appears to be a simplified pricing model that moves away from complexities such as per-processor pricing for the app server, per-entry pricing for the directory, permailbox pricing for the message server and so on.

According to Schwartz, details about the pricing model have not yet been set, but the goal is that enterprises would be able to pay a single price for the entire Sun software stack, based on an annual calculation.

Schwartz insisted that customers would be able to pick and choose which portions of the Sun software stack to use, even though all would be included in the operating-system bundle. For example, he said that customers could choose to use Microsoft's Active Directory or Exchange Server, instead of the equivalent Sun software. But the goal, he said, is to take customers away from Microsoft.

"The good news, with our stuff, is that we make money on systems," said Schwartz. "So, I could guarantee to a customer that we will provide our software at 50 percent of whatever Microsoft prices." ■





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One Processor or Two?

Hyperthreading capability has potential to impact software licensing policies

BY ALYSON BEHR

The arrival of Intel Corp.'s 2GHz-andup Xeon and 3GHz-and-up Pentium 4 processors with hyperthreading has given software vendors reason to pause for thought over their licensing policies.

Hyperthreading—or HTT, for Hyper-Threading Technology—is the term Intel uses to describe the ability to perform simultaneous multithreading on a single processor. Each processor—and this works only with Intel's newest Xeon and

Pentium 4 chips—contains two logical processors, although there's only one L1 and one L2 cache, and one bus connection to the rest of the computer. The net result, according to most accounts, is a speed improvement of between 10 percent and 30 percent, depending on how wellthreaded the application is.

To an operating system or application, each processor looks like two distinct processors; Linux and Windows, for example, report four processors in a dualprocessor Xeon workstation or server.

That brings up the issue of software licensing. Some

products are licensed on a per-system basis, while others are on a per-processor basis. Where does hyperthreading come into play? For that two-way Xeon box, would you need to pay for two licenses—or four?

The problem that vendors have with licensing policies for products being installed by customers on these servers is that the only way to know how many physical processors there actually are in the server is to physically inspect the hardware. Linux and Windows don't see the hyperthreading, and can be fooled into giving an inaccurate proces-

Many vendors don't seem to worry about what the operating system thinks. "We charge per physical processor," said Eric Stahl, BEA Systems Inc.'s director of product marketing for WebLogic Server. "Our reasoning is twofold," he explained. "First, we correlate the value a customer is getting out of the product with the price. Currently, we do this by charging per CPU. Bigger applications use more CPUs, so the app server costs more."

Stahl summed up BEA's rationale: "Per CPU is the best approximation of value and the easiest for us and the customer to administer."

IBM Corp. also charges per physical processor. According to Paul Castiglione, marketing manager for Web-Sphere Application Server, "The reason behind this is that pricing per physical processor is really a concrete way to measure what is directly linked to the physical capacity of the machine. It's just a very straightforward, easy-tounderstand approach that works well for our customers."

Rebecca LaBrunerie, program man-

TWO FOR THE PRICE OF ONE?

A processor with hyperthreading capability looks like two distinct processors to an operating system (below). Software license costs could double if the license is not based on physical servers. A look at some software costs...



Cape Clear

CaneConnect US\$10,000/processor

Excelon

XML Information Suite US\$20,000/processor

Ipedo

Dynamic Information Suite US\$30,000/processor

Wily

Introscope **Monitoring System** US\$3,750/processor

ager for worldwide licensing and pricing for Microsoft Corp., agreed. "Currently available Microsoft server products like SQL Server, BizTalk and Content Management Server are licensed on a perprocessor basis. One processor license for each physical processor on the server is required." Oracle Corp., too, charges per physical processor.

At least for now, Intel is staying out of the fray and is not recommending licensing policies to software vendors. "Intel does not believe it's appropriate to tell other vendors how to license their products," said Intel spokesman Scott McLaughlin.

The level of resources it would take vendors to accurately measure and provide licensing management oversight for these installations is daunting. So for now, it appears that most of the major vendors have chosen not to open Pandora's box and are opting to count physical processors.

But still, given that operating systems and applications won't see an accurate processor count, it may be advisable to check that per-processor software licenses explicitly specify physical processors, and that automated software licensing software detects the chips correctly. ■



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SRP an Oasis for Portal Deployment

An industry specification for the consumption of Web services in portal front ends, as well as to standardize the way in which content providers write Web services for portals, is

advancing through the OASIS standards group, with the technical committee finishing up its work sometime this month. OASIS acceptance is expected this summer.

The specification, Web Ser-

(WSRP), seeks to define a way for Web services to plug into portals, according to Thomas Schaeck, IBM Corp.'s architect of the WebSphere Portal Server and chairman of the OASIS

technical committee. Some 25 companies are working through OASIS (www.oasis-open.org) on the effort.

"Perhaps you want to display weather information or stock quotes in a portal," Schaeck

portlets to display each of these. Also, the portals themselves have different APIs, and content providers have to write seven or eight versions of the same portlet for each portal vendor." Before this effort, he explained, special adapters had to be written to allow portlets to be compatible with numerous portals.

Among the goals, Schaeck said, are creating directories of WSRP services that allow services to be plugged into portals without any coding needed, and to allow portals to publish portlets for use in other portals. "WSRP will create a standard set of operations, and define how to use the operations in a certain order under the WSRP protocols."

Further, he explained, WSRP will establish markup fragment rules that must be adhered to for aggregation within a portal to maintain the correct look and feel. Definitions for HTML and XHTML are the first priority, with WML and Voice XML coming later on, according to a document provided by the OASIS WSRP technical committee.

Kinzan Inc., which is on the OASIS committee working on WSRP and Web Services for Interactive Applications (WSIA), believes the standards will help define how a portlet installed in one server can be rendered in another without having to deploy it to the second server, according to director of product marketing James O'Leonard.

WSRP also seeks to define how a service is published to a UDDI directory, where it can be found and bound into a portal, Schaeck said.

Meanwhile, Schaeck said an effort within Sun Microsystems Inc.'s Java Community Process, ISR-168, seeks to define a common portlet API for J2EE servers. "It defines how portlets are invoked by a portal server, how portlets can access customization and configuration data for display within a portal," Schaeck said. "It corresponds to WSRP." He said he could envision a deployment scenario in which proxies make remote invocations to J2EE portal servers through the API to deploy, using WSRP, a portlet to another portal server. The JCP effort also is expected to be finalized by the summer.

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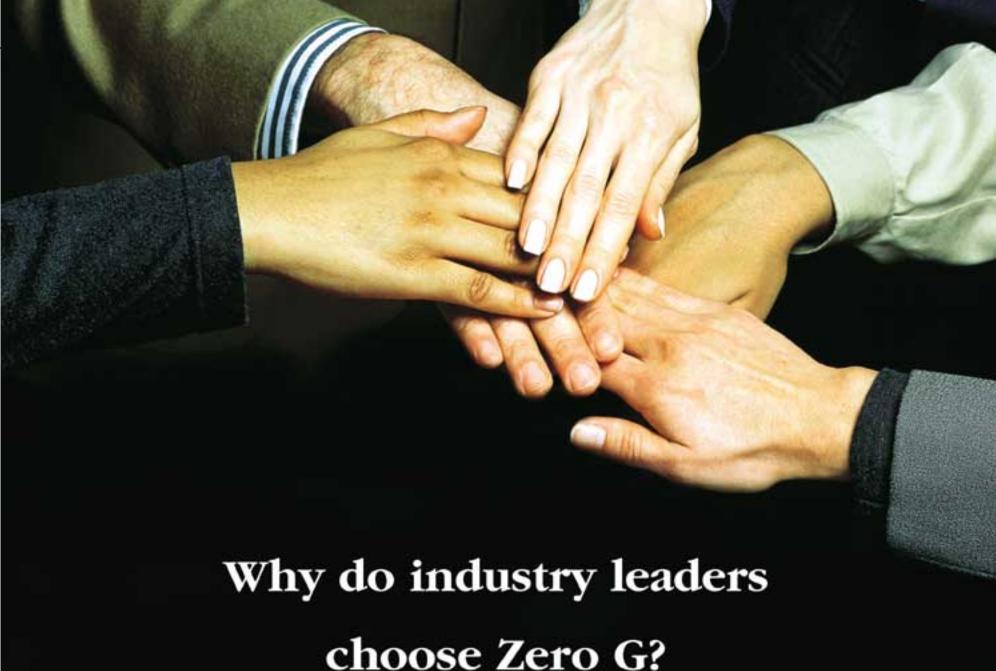
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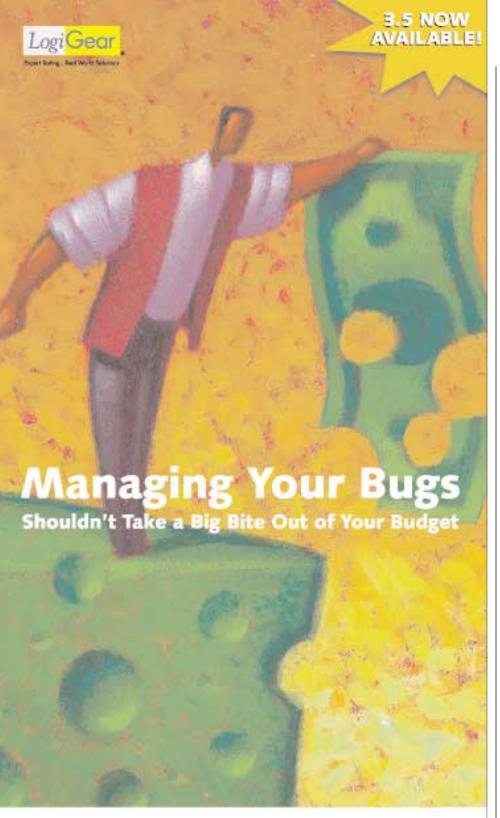


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UML 2.0

continued from page 1

involved getting UML in line with other \mbox{OMG} specifications.

Jon Siegel, OMG's vice president of technology transfer, said, "The upcoming vote on UML 2.0 demonstrates that the specification has taken its final form, and this adoption effort has reached a successful conclusion. UML 2.0 will soon be implemented in tools from not only the 35 companies participating in the adoption effort, but also from any other company—OMG member or not—that downloads the final specification from the OMG Web site once the adoption process completes."

UML 2.0 furthers the cause of component-based development by adding support for business processes and workflows, and is more tightly joined to OMG architectural specifications, Kobryn said. A key new element of the language is the ability to decompose structures at a hierarchical level to an arbitrary level of complexity, making it easier for developers to manage the complexity of an application, he explained.

"In UML 1, with simple classes and components, there was no way to drill down into Sequence diagrams," Kobryn said. "Now, with the integration between structure and behavior, you could right-click on a Use Case diagram to get a Sequence diagram, which provides the behavioral detail for the Structure diagrams. You can decompose complex behaviors and flexibly integrate them" into new applications.

Bringing new tools into the hands of developers, where there has been some resistance to modeling, should help UML tool vendors gain market share and mind share, according to Tim Sloane of Aberdeen Group Inc., a research and analysis firm.

"UML 2 is a huge step forward," Sloane said. "It's moving modeling forward by enabling it to be expanded to a broader audience."

Sloane, however, said it is "harder to discern" if UML narrows the business-IT gap he believes is critical for modeling to become pervasive throughout corporate development shops and smaller organizations. "That's where the character of OMG being architects and software development suppliers comes to the fore. There are not many people in OMG who are business modeling people, who have thought this through to represent business models."

Looking ahead, Telelogic's Kobryn can envision vendors bringing out tools to move requirements from their basis in text into a visual environment. "The language is timely," he said. "We're catching up with component-based development, J2EE, .NET and the convergence of the IDE and modeling tools."

INFRASTRUCTURE SPECS

In addition, OMG task forces are expected to recommend as standards a mapping from Web Services Description Language (WSDL) and SOAP to CORBA, and a way to represent enterprise collaboration as a Web service, according to OMG. The group already has agreed upon the reverse CORBA to SOAP and WSDL mapping.

Other standards expected to be acted on include a connection between CORBA Notification and Java Message Service, a way to deploy and distribute CORBA components, and data distribution in real-time systems.

The Business Enterprise Integration task force will review proposals to standardize interfaces to business processes such as Web services, workflow and e-commerce within OMG's Model Driven Architecture, OMG announced.

THE MODEL FOR UML 2.0

- Alignment of the language metamodel with the MetaObject Facility (MOF) metamodel will simplify model interchange via XML Metadata Interchange (XMI) and cross-tool interoperability.
- An extension mechanism will allow modelers to add their own metaclasses, making it easier to define new UML Profiles and to extend modeling to new application areas.
- Built-in support for component-based development will ease modeling of applications realized in Enterprise JavaBeans, CORBA components or COM+.
- Support for runtime architectures will allow modeling of object and data flow among different parts of a system. Support for executable models will be improved in general.
- More accurate and precise representation of relationships will improve modeling of inheritance, composition and aggregation, and state machines.
- Better behavioral modeling will improve support for encapsulation and scalability, remove restrictions on mapping of activity graphs to state machines, and improve Sequence diagram structure.
- Overall improvements to the language will simplify syntax and semantics, and better organize its overall structure.

Source: Object Management Group Inc.

www.sdtimes.com Software Development Times March 15, 2003

Sybase Lays Foundation Beyond 4GL in PowerBuilder 9.0

BY DAVID RUBINSTEIN

With its release next week of PowerBuilder 9.0, Sybase Inc. is claiming to be laying the groundwork for "4GLplus," its term for rapid application development that will take into account development and management through an application's life cycle.

Among the new features in version 9.0 are the ability to create JavaServer Pages "as a RAD 4GL experience," said Sue Dunnell, PowerBuilder product manager. Also, applications built using Power-Builder 9.0 can run on Sun-certified Java application servers, although Sybase admits that tests have been completed only on BEA's WebLogic and IBM's WebSphere. This will allow developers to build an application or component such as a Web service in PowerBuilder while accessing the business logic in an EJB wherever it is, Dunnell said. "This brings PowerBuilder into the J2EE world," she said. PowerBuilder, she noted, also allows for publishing and consuming Web services in the Microsoft .NET platform.

Another key feature in this release is the creation of XMLbased DataWindows. Dunnell claimed that DataWindows have been a cornerstone of PowerBuilder's success, allowing developers to have a single control for doing complex SQL statements and data manipulation and presentation. With version 9.0, developers can build XML DataWindows into applications, or export existing DataWindows as XML. Further, the company is including the PowerBuilder Document Object Model, Sybase's implementation of the industry-standard DOM, to read and write XML from within PowerScript, Sybase's scripting language.

Sybase has added a Power-Builder Native Interface into this version, which allows developers to extend the language by wrapping C++ classes as Power-Builder classes, and then calling those methods from within the app created in the tool, Dunnell said.

"The vision for Power-Builder going forward is to bring the 4GL experience to all developers throughout the life cycle," Dunnell said.

The update price is US\$1,495

for existing PowerBuilder customers; the normal price remains the same as version 8.0 at \$2,995 for the Enterprise edition, \$1,295 for the Professional edition and \$295 for a standalone Desktop version.

DEVELOPING FOR HANDHELDS

Later this year, Sybase will release Pocket PB, a version of PowerBuilder for deploying applications to Windows CEbased handhelds. The project is a joint development effort between the PowerBuilder and iAnywhere groups at Sybase, according to PowerBuilder marketing director Dan Goldstein. Although no formal announcement has been made, Goldstein indicated Pocket PB will extend

the use of DataWindows into the handheld environment. As to why the effort targets Windows CE and no other handheld operating system, Goldstein simply said, "Most of our customers requested this."



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IBM, Opera Sing Praises of Voice-Enabled Web

Companies release browser, toolkit to create apps that merge visuals, voice

BY FDWARD J. CORREIA

Soon, speaking into your cell phone may mean more than a simple two-way conversation. IBM Corp. and Opera Software (www.opera.com), maker of a Web browser commonly found in handheld devices, have released the Multimodal Browser and Toolkit, a voice-enabled environment that uses the World Wide Web Consortium's draft XHTML+VoiceXML specifications to enable the construction of browser-based applications capable of input and output from multiple sources, including voice, numerical keypad and stylus, according to the companies.

"This is the first step in merging visual content with voice-enabled devices like cell phones and other handhelds," said Les Wilson, senior multimodal architect with IBM's Pervasive Computing division.

Wilson explained what he characterized as a simple process of voice-enabling existing Web applications. "Whether

it's a flight-reservation system or stock-price query, usually there's some kind of form. For each piece of that form, you create a piece of VoiceXML that speech-enables it. Then you develop the grammar that's allowable for that field." The tools also include an embeddable version of IBM's ViaVoice software that handles the voice processing, converting spoken words into text, which is then matched with the developer's grammar. "When the ZIP code field is in focus," he continued, "you enable the VoiceXML part of the code for that field. When the focus moves to another field, the code for that field is enabled and so on. As a developer, you just need to tie these things together, to associate them."

In addition to an X+V editor, and embedded browser and speech synthesizer, the kit will include IBM's middleware for back-end voice processing and a simulator. "The simulator is a visual Opera browser enabled for voice. You are simulating what will be running on a device for voice debugging," said Wilson, adding that the editor also works with a developer's own XML debugger.

The public beta of the Mul-

timodal Browser and Toolkit, which has been available to a select number of developers since November, is now available to the general public, and is implemented as a plug-in to WebSphere Studio. IBM

has not set a release date or determined if it will charge for the toolkit.

Wilson said that X+V is still under consideration by the W3C, which likely won't approve it before September.

Floisand Quits Top Posts at Rogue Wave

John Floisand has resigned his positions as chairman and CEO

of Rogue Wave Software Inc., the company announced late last month. Taking over as president and CEO is industry veteran Kathleen E. Brush, who had been vice president of marketing and engi- Citing personal neering at the company. reasons, Floisand ter income, excluding Brush said Floisand is has left Rogue leaving the company Wave. "for personal reasons."

Floisand's tenure began in September 2001 when he took over for Jack Iacobucci, who was forced out by the board of direc-

tors. Under Floisand, the company (www.roguewave.com) had to reduce its work force by 37 per-

cent to return to profitability. In the first quarter of 2003, revenues were US\$9.6 million, higher than expectations but 20 percent lower than year-ago earnings of \$11.9 million.

This year, first-quarrestructuring and severance expenses of roughly \$2.1 million,

was reported as approximately \$510,000; last year, the company lost \$878,000 in the same quarter, also excluding \$562,000 of

costs. The company anticipates second-quarter revenue of between \$8.7 million and \$9.7 million, and expects fiscal-year 2003 revenue of between \$39 million and \$41 million, continuing a downward trend mirrored by many high-tech companies in these uncertain economic times. In 2001, Rogue Wave had \$57.7 million in revenues, which then dropped 25 percent to \$43.3 million in 2002.

Also, Rogue Wave announced that Thomas M. Atwood is the new chairman of the board, replacing Floisand, who resigned Feb. 21. Atwood has been a member of the board of directors since 1994.



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WFBI OGIC 8.1

cludes new tools to simplify the installation and administration of server clusters.

The goal with clustering, he said, is to approach mainframe-like reliability. "Mainframes have the uptime, but they can be very

complex to deal with," said Dietzen. "To be fair, we're not there yet," he admitted. "No Java Web technology is at a mainframe quality-of-service level today. But we're making good progress, and we're hiding a lot of the complexity from the users."

BEA also supports the nascent WS-Security and WS-

Acknowledgement specifications with this version of WebLogic Server, according to Dietzen, but these work only between WebLogic implementations. Those specs define mechanisms for secure Web services, for "once and only once" delivery of SOAP transmissions.

Dietzen said the company's

WebLogic Portal, an application that runs atop the J2EE app server, supports two Java Community Process specification proposals. JSR-168, Portlet Specification, defines a set of APIs for portal computing. JSR-170, Content Repository API, defines an implementation-independent means of

accessing relational and nonrelational data sources. Both JSRs were introduced in February 2002, and neither has advanced toward a community or public review stage.

BEA's WebLogic Integration Server, which also runs on the app server, now supports XQuery, a SQL-like XMLbased query language that BEA submitted to the W3C, as well as BPEL, the Business Process Execution Language jointly defined by BEA, IBM and Microsoft in mid-2002.

"We can import BPEL-standard definitions into our environment, and convert them into a graphical Java representation of that workflow. You can also develop directly for this model inside of the WebLogic container," Dietzen said, adding that BEA would be taking that model format, which he called JPD, or Java Process Definition, to the Java Community Process. "It makes a very easy way to compose Web services, or calls into existing adapters or EJBs," he said.

Getting slightly carried away, perhaps because BEA was set to give away Scott Dietzen bobblehead dolls at eWorld, he continued, "We can make integration something that's actually fun."

WORKSHOP DOES EJB, JSP

When first introduced last year, BEA's WebLogic Workshop 1.0 development tool was able to build only Web services-enabled applications. With the 8.1 release, Workshop can also build Enterprise JavaBeans and Java-Server Pages-based software.

Previously, Dietzen said, "WebLogic came with an adapter tool, a transformation tool, a workflow development tool, and you used Workshop as the Web services tool. Now it's all Workshop."

A key feature, Dietzen said, is called EJB Gen. "The Java programming part of EJB is great. But then developers have to define a number of interface definitions, which is really onerous, but the really ugly stuff is writing deployment descriptors, which your average EJB developer can't stand doing," he said.

General availability of the app server is planned for late March, according to Dietzen, and for the portal and integration servers in June. WebLogic Workshop 8.1 is planned for release this summer. ■



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Editable Data Grid New to CodeCharge

BY DAVID RUBINSTEIN

An editable grid is the key new feature of CodeCharge Studio 2.0 Web application development environment, due to be released in mid-March by YesSoftware Inc.

The editable grid gives users the ability to submit multiple lines of data into a page at one time, according to Konrad Musial, the company's founder and CEO.

"The grid is efficient to create Web modules for ERP-type systems," Musial claimed. "You can update order processing, inventory management and shopping carts, for example."

Musial said that prior to this release, data in applications built using CodeCharge Studio could be displayed in a grid as a report, or new data could be entered into one record only. Adding the grid, he claimed, finalizes CodeCharge's feature set for adding line items for multiple records per page.

Other new features in CodeCharge Studio 2.0 include a tool for developers to create a

VERSION ONE

← continued from page 1

business people together through the planning, requirements gathering, task management and reporting phases of an agile project. It has the same look and feel as whiteboards and story cards, so "it's comfortable for people to use," Holler said.

The tools also can be used to simplify revisions or updates to the project after it is completed, Holler said, because its underlying audit capabilities keep track of what happened during the project and when. Users can override the prewritten labels and headings to localize the framework to their existing terminology, Holler said.

Among the most widely used agile processes supported by VersionOne are Extreme Programming, Scrum and DSDM, which focus on short delivery cycles and incorporating customer feedback into subsequent versions, he added.

The framework, which is accessed via a browser from a centralized server, runs on Windows and sells for US\$500 per seat, with discounts available for large installations. ■

Yahoo-style directory that provides quick navigation and access to precategorized data, and a diagramming feature that allows developers to create visual representations of what they are doing on a project.

"UML-like diagrams can be used for Web site specifications, and for documenting a Web site," Musial explained. Another feature enables developers to add pop-up calendars to their data-entry forms that

allow users to choose the date from a drop-down list.

CodeCharge Studio 2.0, which also is being translated into Japanese by reseller AG Tech, sells for US\$499.95, the same price as version 1.0,

Musial said. The IDE builds HTML-based applications compatible with Microsoft's ASP and ASP.NET, JavaServer Pages and ColdFusion, according to the company (www.yessoftware.com).



Software Development Times , March 15, 2003

News Briefs

COMPANIES

SD Forum, a not-for-profit technology organization in Silicon Valley, has partnered with the Anza Technology Network, Chinese Software Professionals Association and SiliconFrench with Passport Program, which allows the groups to pool their membership benefits. Together, the groups have 15,000 members . . . Microsoft Corp. has acquired the virtual machine assets of Connectix Corp. These include Virtual PC for Mac, which lets Windows applications run on Mac OS X, and Virtual PC for Windows, which lets Windows NT/2000/XP workstations run Windows 9x in a virtual machine. Microsoft will be introducing a server version of the Windows product. Connectix will continue to sell its other Macintosh, OS/2 and Windows applications.

PRODUCTS

BEA Systems Inc. has released a version of its WebLogic Server 7.0 for HP's Itanium 2-based servers running HP-UX 11i v 1.6. Separately, the company updated its **Tuxedo** transaction processing middleware: version 8.1 adds support for Web services. A new version of BEA's Java Virtual Machine has been released for Intel's Xeon and Itanium 2 processors; JRockit 8.0 also includes new profiling and debugging interfaces, and is optimized to run with BEA's WebLogic Workshop IDE ... Iona Technologies Inc. has shipped its Orbix ASP integration software for IBM's zSeries mainframes. Orbix ASP Mainframe Edition 5.1 supports COBOL, PL/I and C++, and can interact with CICS and IMS applications via CORBA or Web services calls. It also includes EBCDICto-ASCII conversion . . . KnowNow Inc. has released Live Browser, a tool that adds server-based notifications and instant-refresh data exchange to Web applications. The software includes a runtime server. a JavaScript library for client-side HTML

NnowNow pages, prebuilt browser components for Inter-LiveBrowser net Explorer and Netscape, and back-end data connectors for Java, ActiveX or .NET applications . . . Corda Technologies Inc.'s new OptiMap is a server application for generating dynamic Web-based maps based on geographic data. The US\$6,990 server application, which includes a development tool, creates drilldown and pop-up maps. Corda also released version 5.0 of its PopChart server software, which generates Web-based graphs and charts; the new release can generate code for PHP and Perl, in addition to the previously supported Java, .NET and XML . . . Version 5 of Information Builders Inc.'s WebFocus business-intelligence tool allows reports to be requested and delivered using Web services. The software also allows browser-based ad hoc OLAP reporting . . . SSH Communications Security has updated its secure shell SDK. SSH Secure Shell Toolkit 4.0, designed for embedded applications, updates support for IETF encryption and authentication standards . . . Handspring Inc., which makes handheld devices running Palm OS, has launched a developer program for its Treo smartphones . . . DataKey Inc. has released Model 330J Java Card, which includes built-in RSA-com-



patible signing using 1,024-bit and 2,048-bit keys, 3DES and SHA-1 encryption, and oncard key generation. Model 330J is compat-

ible with DataKev's non-Java Model 330 smart card . . . Version 3.5 of the A-Flow rapid prototyping tool for Windows now offers explicit ODBC support, an improved debugger and a new flowchart drawing algorithm. The tool, from A-Flow Development Team, costs US\$46 . . . TechExcel Inc. has updated its defect-tracking tool to include a new Web interface for a developer's beta users. DevTrack 5.1 also allows deployment of multiple Web servers connected to the same bug-tracking server, and enhances its support for e-mail bug submission and notification . . . I-Logix Inc. has added new features for largeteam collaboration to its Statemate 3.2 embedded development suite. Statemate 3.2 includes a new configuration management interface and automatic generation of hyperlinked documentation. It includes new links to Telelogic's DOORS requirement management software, and can automatically generate UML sequence diagrams ... Thought Inc. has updated its CocoBase object-relational mapping software. CocoBase Enterprise O/R 4.5 Service Release 1 now integrates with IBM's WebSphere application server and Eclipse IDE, and includes new importers for complex classes > continued on page 16

Intel Touts Communication, Computing Convergence

Road maps for smaller, faster chip designs unveiled

BY ANDREW BINSTOCK

SAN JOSE — Twice a year, the Intel Developer Forum provides the world's No. 1 chipmaker with the opportunity to present its new processors and explain its predictions for mobile, desktop and server hardware. These presentations often have specific importance to developers, especially those at ISVs, who can benefit from guidance as to how systems are likely to be configured in the coming months and years.

The theme of the IDF held here in February was the convergence of computing and communication. In marketing terms, this convergence was characterized as a future in which "computing devices will all communicate, communication devices will all compute."

Intel Corp. CEO Craig Barrett pointed to how, insofar as this convergence has already occurred, its benefits are felt in three specific attributes of all computing devices: "performance, cost and form factor." To drive home the point, Barrett cited Intel's announcement of its new PXA800F chip, which puts an entire cell phone on a single processor, as an example of advances in all three categories.

For client end points, the spotlight was on Centrino, Intel's mobile computing platform previously code-named "Banias." Centrino consists of a Pentium M processor and a chip set that supports Wi-Fi 802.11b. The Centrino chip set actually contains support for 802.11a and b, but only 802.11b currently is activated. Intel did not release dates as to when it 802.11a would be enabled.

The Pentium M processor, according to Intel general manager Mooly Eden, is characterized by features designed to reduce power consumption. "For example, to save power, it turns off parts of the main cache that are not in use."

In fact, the chip does much more than this, according to technology analyst Tom

Halfhill of research firm In-Stat/MDR—it also turns off the transistors in its data buffers while waiting for data to arrive from main memory.

When the data is on its way to the processor from memory, commented Halfhill, "[the chip set] signals the CPU to activate the input buffers." Such powersaving measures are expected to lower power consumption significantly, thereby reducing heat and prolonging battery life.

Centrino-based notebooks available for inspection on the IDF show floor

were indeed notably cooler to the touch—essentially lukewarm—than were previous iterations that used the Mobile Pentium 4 processor.

As to battery life, Anand Chandrasekher, vice president of Intel's Mobile Platforms Group, contended that Centrino-based notebooks were benchmarked at 316 minutes on a single battery charge running the same load for which a Mobile Pentium 4 system could get only 174 minutes of running time, about an 80 percent improvement.

BURSTING OUT

Louis Burns, general manager of desktop products at Intel, discussed the upcoming improvements to the NetBurst architecture, which is found in the Pentium 4 and Xeon processors.

The next processor release, code-named "Prescott," will sport 1MB of L2 cache and an 800MHz front-side bus (compared with current implementations with 512KB of cache and a 533MHz bus).

While Burns did not state the clock frequency for the first release of Prescott, he did announce the processor will be part of the profile for highend desktops going forward. This profile, referred to by Intel as "Canterwood," includes Gigabit Ethernet, Serial-ATA disk interfaces, AGP 8x graphics bus, and DDR 400 memory (or using the bandwidth measure, DDR3200). In addition, said Burns, Intel will be delivering RAID capability on the platform.

www.sdtimes.com

AGGRESSIVE ON ITANIUM 2

At the enterprise level, Mike Fister, Intel's senior vice president of enterprise platforms, laid out an aggressive road map for revving the company's 64-bit Itanium 2 processor, confirming that the company will be shipping the version, code-named "Madison," some-

> time this year. Previously, Intel had announced that the Madison chip would

have 6MB of internal cache, compared with a maximum of 3MB of cache in current versions of the processor.

Fister also detailed the subseguent release of the next Itanium 2, code-named "Montecito." "It has two [processor] cores on a die. So this is the first time at Intel we'll put multiprocessor core on a die." In essence, this capability provides built-in multiprocessing.

He also described a new Itanium-family member, codenamed "Deerfield," targeted at workstations, which will include 1.5MB of cache, though he claimed, "[It] runs about the same performance as an Itanium 2 does." Given that InStat-MDR reports that the Itanium 2 processor currently is the performance leader among server chips, this release is expected to have an important impact on the 64-bit workstation market.

For software tools, Intel announced the impending 3.0 release of its high-performance C/C++ and Fortran libraries, called Intel Performance Primitives (IPP). These routines are highly optimized for different Intel processors. According to the company, the new release will include full implementations for all of Intel's processors from Itanium 2 down to the XScale embedded chips used in handheld devices. IPP 3.0 also adds new functions that support encryption. Pricing for IPP will remain at US\$199. ■



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News Briefs

MORE PRODUCTS

and UMI/XMI object models . . . Empress Software Inc. has ported its Empress RDBMS embedded database to LynuxWorks' LynxOS 4.0 real-time operating system ... SoftComplete Development has updated HardKey, a serial-number generator that adds encryption and key management to applications. The US\$149 program can be used as a DLL- or COM-based server within Microsoft's IIS Web server. Version 3.2 includes an SDK for Delphi, C++ Builder and Visual C++, and adds a MAPI interface for sending registration letters via e-mail . . . Corel Corp. has updated its XMetaL XML content editor for Windows. New to version 4 is support for the W3C's XML Schema standard; a new Forms Toolkit for creating inline forms and dialog boxes; and a Java API that eliminates the need for a COM wrapper when accessing XMetaL content from Java, Different versions of the editor are priced from US\$499 to \$999 . . . IBM Corp. has added a new Grid Toolbox application for AIX and Linux to its alphaWorks site. It also is offering XForms Data Model Framework, a sample implementation of the XForms XML-based Web forms specification being developed by the W3C . . . Blue Marble Geographics has updated its GeoObjects, a 32bit COM control for spatial data access, display and analysis. GeoOb-BLUE MARBLE GEOGRAPHICS jects 3.1 supports a wider variety of geographic information system file formats, and now includes Visual Basic and Delphi sample code . . . Spectrum Software Inc. has added a new API to its SpectrumSCM sourceconfiguration management server. The API allows developers to create plug-ins that can be dynamically loaded and executed by the SCM server . . . Raining Data Corp. has released an ADO.NET data provider that ties its D3. UniData and UniVerse databases to Microsoft's .NET Framework. The new Pick Data Provider for .NET is priced at US\$495 per developer and \$200 per database server . . . Microsoft Corp. has renamed its new Office application, formerly known as XDocs, as InfoPath. The tool, to be included in the forthcoming Office 11, is a forms-based document-editing and data-capture application ... Neon Systems Inc. has shipped Shadow Console, a graphical data management and debugging tool for mainframe-based applications. Shadow Console works with

Neon's Shadow Connect server to link J2EE and .NET applications to mainframe data sources via JDBC and ODBC . . . ANTs Software Inc. has ported its ANTs Data Server to Sun's 64-bit Solaris running on SPARC processors. Data Server is a SQL-compliant relational database . . . AutomatedQA Corp. has updated its AQTime code profiler to include line timing profiling, improved accuracy, and the ability to attach the profile to a specific process at runtime. Version 3, which runs on Windows, now supports Intel's C++ and Compag Visual Fortran, in addition to Visual C++ and Delphi . . . IDAutomation.com Inc. is shipping a bar-code control for .NET that creates JPEG images based on many bar-code formats. The new ASP.NET Barcode Server Control is priced at US\$199 per server: royalty-free developer licenses cost \$395 . . . Groove Networks Inc. has released Groove Web Services, an integration framework that allows external access to its desktop collaboration software. The company also is offering Groove Toolkit for Visual Studio .NET, which allows developers to build add-on apps for the Groove desktop . . . In June, Sun Microsystems Inc. plans to release a Java Device Test Suite for J2ME applications using the CLDC and MIDP 2.0 specifications . . . Red Gate Software Ltd. is now offering ANTS



Profiler 1.0, a US\$195 code profiler for .NET designed to work with any CLR-compliant language . . . Greek firm Likno Software has a new tool, **AllWebMenus Lite**, which generates server-side application menus in JavaScript and

DHTML. Priced at US\$45, the tool runs on Windows, and can interface with Microsoft's FrontPage HTML editor . . . IgxReportDev Professional is a new Web-based reporting tool for .NET from LogiXML Inc. The tool, an upgrade from IgxReportDev Standard, adds unlimited subreports, instant and on-demand reports, multilayered charts, and export to Excel, HTML, PDF, Word and XML. It includes a set of .NET server components, and is priced at US\$295 per server and \$495 per developer seat.

Logically, Versata Now Targets IBM Developers

Creates business rules plug-in for WebSphere Studio

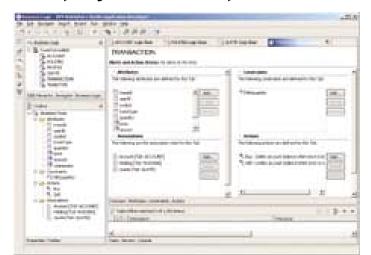
BY DAVID RUBINSTEIN

Hoping to gain a stronghold among IBM developers, Versata Inc. last month released a business rules creation tool for the WebSphere Studio development environment.

The new release, Business Logic Designer for WebSphere Studio, carries the same functionality of Versata's Logic Studio rules tool, but users would create their own presentation layer within WebSphere Studio.

Versata's plug-in, though, does include a tag library so developers can simply drag and drop logic elements into the presentation layer, according to Shannon Lynd, head of marketing for Versata. Developers can download the designer for free from the company's Web site (www .versata.com) for use in creating applications, but to deploy the apps into production, Versata's Logic Server must be purchased; it costs US\$40,000 per server processor.

Lynd admitted that developers using Versata's tools already could deploy to IBM's Web-Sphere Application Server. However, she claimed that her customers wanted a single IDE that allowed them to build logic into applications, instead of using separate tools for code and business rules.



Versata's plug-in puts transactional apps in a business logic perspective.

She added that the plug-in encourages developers to consider business rules at the outset, instead of trying to add them into an application after it functions, when budgets and time are most constrained and the risk of an application not coming out right is greatest.

The plug-in, Lynd said, focuses on the transaction logic and data logic layers of an enterprise application, with the tool able to generate more than 95 percent of the logic automatically. Versata cited IBM benchmarks to claim that developers hand-coding one session EJB for logic in a simulated online brokerage required 32 pages of Java code; Versata's tool created four business rules automatical-

ly to replace the session bean.

"Versata's out-of-the-box solution came within 3 percent [of the performance] of the hand-coded EJB," said Lynd. "And that logic was very basic; as the logic becomes more complex, the value of the tool becomes even greater."

Versata currently is not considering other platforms to target; Lynd said, "We get no demand for Oracle or iPlanet" application servers (iPlanet is now called the Sun ONE Application Server). Versata's standalone Logic Server product is based on the Visibroker CORBA solution, but Lynd said that might be replaced with the JBoss open-source Java application server.

Ixia's TextML Supports Adobe's XMP

BY DAVID RUBINSTEIN

Continuing its partnership with Adobe Systems Inc., Ixia Inc. will support Adobe's Extensible Metadata Platform (XMP) in its forthcoming XML content server, TextML 2.3.

XMP, according to Ixia CEO Phillipe Gelinas, is an XML framework being built using the World Wide Web Consortium's Resource Description Framework (RDF)—the W3C's standard for metadata—and XML namespaces, and provides a way for developers to embed metadata inside application files.

"The idea of modifying application file formats to make them readable as XML blocks is worthwhile," Gelinas said,

who added that the XMP packets can include any XML schema, so long as it is described in RDF syntax.

With XMP, TextML users can process Adobe files directly by accessing the XML metadata, Gelinas explained, although he admitted it is unclear at this point if XMP will be picked up as an industry standard. "A sufficiently large number of Adobe users felt it was useful" for Adobe to develop it, Gelinas said. The work expands on a partnership with Adobe that began last fall when TextML was integrated with Adobe's FrameMaker XML authoring tool. TextML 2.3 was to be available earlier this month.

Ixia also announced the availability of an integration kit for Microsoft Content Management Server, a toolkit that hooks into a CMS application and automatically updates the underlying SQL database and TextML database whenever CMS site content is modified, Gelinas said.

NET Composite Controls can be taken from the Visual Studio .NET toolbox by developers and dragged into a CMS site under development, allowing developers to add XML search and sort capabilities to deployed sites by leveraging the XML placeholder functionality of CMS. The integration kit is available from the Ixia Web site (www.ixiasoft.com). ■



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@business is the game. Play to win."

DON'T CHANGE THE CHANNEL

grams, chairman and CEO Philip Deck's voice gained excitement. "We get really uncomfortable when anyone comes between us and the customer," he insisted.

"When we hear Borland rave about their channel, it just makes our spine tingle.

"Frankly, it's a huge opportunity for us," Deck continued. "Borland is a tremendously able company in the MKS' tools let channel, and when they users keep their bought Starbase, their own processes. first instinct was to ask, says Deck.



'How can we put a shrink-wrapped version of StarTeam down the channel.' We have no interest in the

channel. Our entire strategy is based on having very wide and deep interfaces with our customers."

To keep that tight relationship, MKS is expanding its current field offices in Europe and the U.S., and will be opening its first California office. The company will increase its U.S. staff from 66 to more than 100 this year.

What about Rational? There's no love lost there. "We are diametrically opposed to their approach to software development," Deck stated flatly, "Rational says, 'We have this highly rigid process that we will apply to your development environment, then life will be great. And if you don't like it-well, why wouldn't you?"" he laughed.

In other words, "We don't try and jam a process down your throat. We give you tools to adapt to whatever processes you have." he said.

Deck also hopes that the Rational acquisition might steer some of IBM's competitors in his direction. "The immediate advantage is that many of the leading players in the computer industry were aligned with Rational, because Rational was the single largest, most credible SCM force in the market. Many of those people are re-evaluating that. Whether it's Sun, HP, BEA, you name it—they all have to decide if they want IBM to be their SCM vendor partner."

While Deck admitted that MKS hasn't yet picked up any partnerships due to the Rational acquisition, he intends to take advantage of the uncertainty. "Time will tell," he said. "We're trying to get them to recognize that we're a good partner. And we're finding a more receptive audience now that the IBM deal has been done."

-Alan Zeichick

MKS: ENTERPRISE SCM

cations we have now."

MKS, therefore, must remain agnostic, even to supporting its competitors, he said. "We have not only a command-line interface that makes integration easier, but we're Web server-based, so integration becomes much easier," Deck explained. "We're slowly moving through the list of the people we have to integrate with, like Mercury and Rational. We just announced new integration with Mercury and [IBM's] WebSphere."

MOVING FORWARD

MKS will stick to its knitting—enterprise SCM—building instead of buying new functionality. "The experience of the market is pretty clear," Deck concluded. "The companies that have done a whole bunch of acquisitions, and took very different kinds of technologies and mushed them

together, have run into real problems. It certainly choked Starbase to death. We don't want to be there."

Similarly, Deck ruled out a big player acquiring MKS itself. "We want to run the business. One of the advantages we have is that we're tightly held; between myself and a couple of other shareholders, we control almost half the stock, so we're not vulnerable. We look at the opportunity in enterprise SCM over the next few years as being unique. "■

ALTOWEB

transition between low-level coding and code-level debugging, and the actual assembly of the application."

Barnhisel said that Xpi 3.0 supports JSP Forms, Java Message Service, production and consumption of Web services, and O/R mapping based on Castor. "That provides a foundation for sophisticated data transformation and validation." The Castor project (www.castor.org), led by Intalio Inc., is building an open-source data binding framework for Java.

The unit test included in previous versions has also been extended, Barnhisel said. "We now have visual multithreaded application-level debugging that will let you look at the entire application and see anything that's a mismatch."

Wilkes also explained that Xpi 3.0 incorporates the Apache Software Foundation's Struts Web application framework. "With version 2.8, we had our own Web flow mechanism, because there wasn't anything around that we could use. For 3.0, we saw that Struts had become the de facto standard MVC [model-view-controller] architecture for Web flow," he said.

Pricing for AltoWeb's Xpi 3.0 remains at US\$2,500 per developer seat, and \$15,000 per server processor for deployment. ■

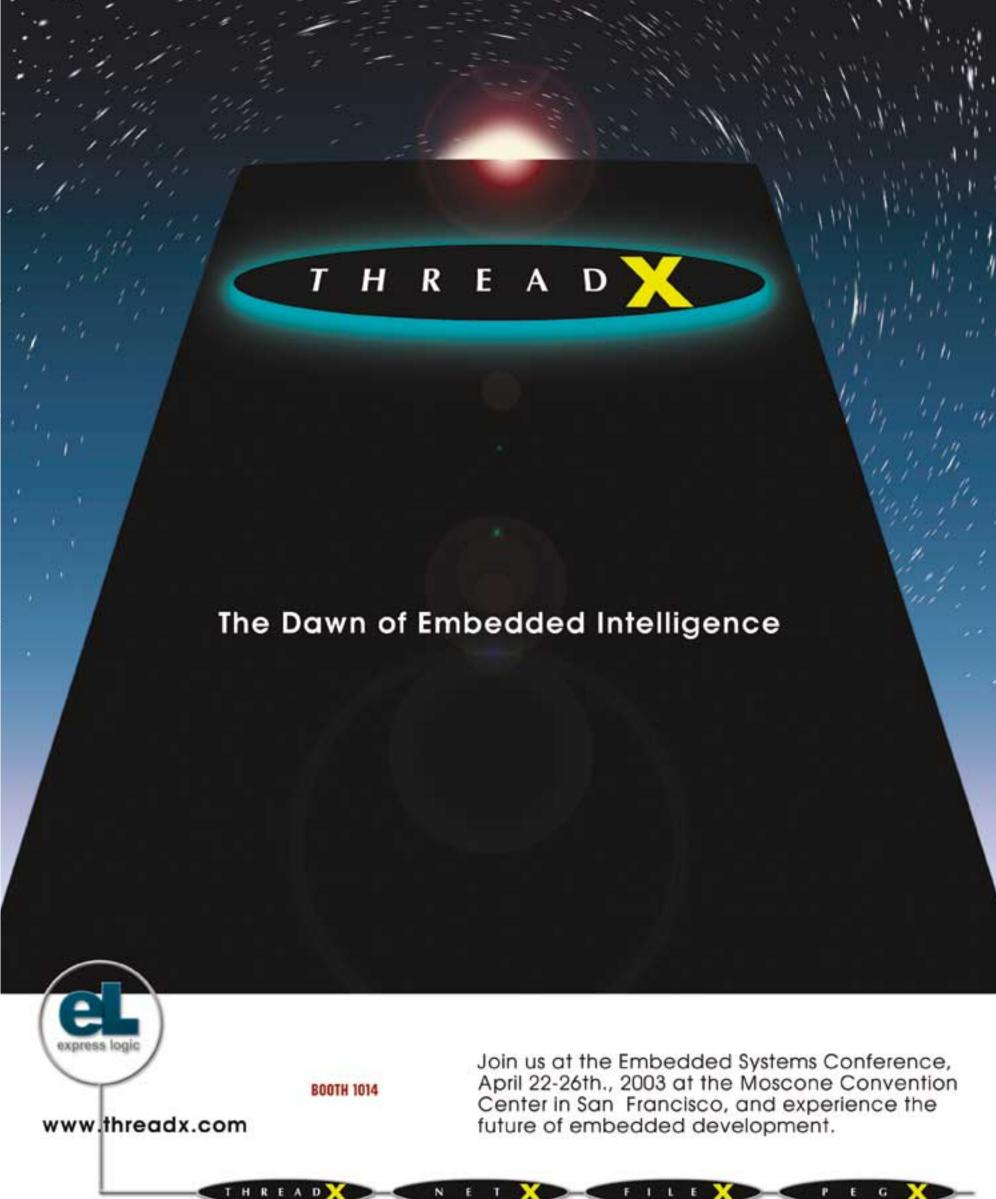




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TimeSys Makes Linux a Commodity

Cutting prices to the bone, RTOS maker stirs embedded pot for x86 targets

BY EDWARD J. CORREIA

Linux as a real-time operating system has taken a step closer to commodity status. At least that's how RTOS maker Time-Sys Corp. sees it. The company in mid-February reduced its price for TimeSys Linux 4.0

standard edition, its newly updated embedded Linux operating system and commandline SDK, to US\$80 from \$2,500. TimeSys also has dropped the price of its hard realtime version to \$800 This pricing blows from \$5,000. Both dis- other Linux SDKs tributions now incorpo- 'out of the water,' rate version 2.4.18 of claims TimeSys' the Linux kernel and Weidman. target x86 devices.

"This blows other embedded Linux SDKs out of the water," claimed TimeSys CEO Larry Weidman. "We're breaking the price-performance barrier for embedded Linux development and making Linux more available to developers who want to build embedded systems. We are

[enabling] embedded developers who are working on a project now or evaluating Linux for future projects to evaluate on an x86 target for \$80 or with a full Linux real-time operating system for eight hundred." Both can be deployed royalty-free and

include only commandline tools.

Weidman claimed that in its base configuration, TimeSys Linux outperforms the competition. "We have lots of [customers] building network devices and a range of consumer devices, [and] we think it surpasses the capabilities of other open-source platforms, such as those

from MontaVista, before you buy their real-time [extensions]."



TimeSys also in February updated its professional edition to include TimeStorm 2.0, a graphical integrated development environment based on IBM's Eclipse opensource developmenttool framework for Linux and Windows that Weidman said works with any Linux distribution. The professional version also includes TimeTrace, an event visualization and trace tool, for \$2,995 and supports an expanded list of targets. The professional edition plus real-time extensions costs \$4,995.

All TimeSys Linux 4.0 editions also now offer hotswap capability for Compact PCI and user-level multithread debugging, which Weidman said enables more precise debugging than process-level debugging would allow. "It's a little more fine-grained; you get more opportunity to get down into the code and optimize your system."

Message queues in version 4 are now fully POSIX compliant,

HOW THEY STACK UP

Here is a comparison of base prices for embedded Linux development tools from several vendors. Note variations in target support as well as training, technical support and other included services.

COMPANY	PRODUCT	SUPPORTED TARGETS	PRICE	NOTE
MontaVista Software Inc.	MontaVista Linux Professional	Includes all supported boards in any single architecture	\$12,500	Annual subscription includes support, training, services
Metrowerks Inc.	Metrowerks Platform Creation Suite	ARM, ColdFire, MIPS, PPC, SH, x86	\$5,000	Support costs \$2,500 extra per free BSP
LynuxWorks Inc.	Blue Cat Linux	IA-32, XScale, MIPS, PPC, ARM, SH3	\$2,699	Includes six-month support contract
Red Hat Inc.	Red Hat Linux Professional	x86	\$149	Includes installation support only
TimeSys Inc.	TimeSys Linux Standard Edition	x86	\$80	ncludes 30-day install support via e-mail

according to Weidman. "That means that if you're running an application on one operating system that you've written that uses POSIX message queues, it should more easily port to other versions of Linux.

Weidman said that another differentiating feature of TimeSys Linux (www.timesys .com/40x86.cfm) is its process reservation technology, which allows developers to set aside

certain system functions to survive in conditions of severe overload. "We have the ability to allow the programmer to reserve minimum levels of CPU cycles or network bandwidth so critical applications such as failure notifications won't be drowned out by sheer volume on a telecom switch [for example]." The capabilities can be added to TimeSys real-time bundles for \$7,500. ■

Kada Protects IP With Abstraction Layer

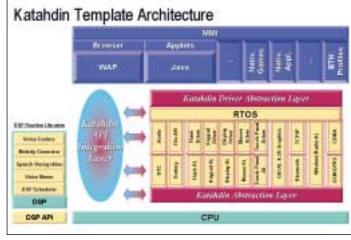
Teams with Texas Instruments on mobile-phone reference design

BY EDWARD J. CORREIA

Would you pay a dollar per deployed device to guarantee that your applications and device drivers will run in future hardware designs? Java developer Kada Systems Inc. is banking on it.

The company this fall expects to release a beta version of "Katahdin," the code name for an abstraction layer project for ARM 7- and ARM 9-based mobile devices that it says will permit developers to build services and capabilities that can be plugged into any device equipped with its software.

Tom O'Connell, vice president of sales and alliances at Kada, described the software as a backplane that serves to abstract both hardware and operating system. "We're trying to remove a layer of complexity. It's a substrate that allows [developers] to plug in wireless services in an OS-independent style. We're providing an API and driver integration layer to



Kada's software 'backplane' is intended to prevent software obsolescence.

allow [developers] to reuse components from legacy phones and move them forward without being constrained by services provided with commercial operating systems."

The constraints, he said, are mainly related to applications and drivers tied directly to hardware. "A lot of the commercial operating systems include many cell-phone services, but don't allow the flexibility to plug in additional services, such as a real-time clock, 2D graphics, Bluetooth and Java capabilities, and a browser. Katahdin is an API integration layer that allows components to be used in future phones without having to rewrite a driver."

Though he didn't deny the potential for performance slowdowns due to hardware abstrac-

tion, O'Connell claimed that such bottlenecks will be offset by faster processors. "CPU performance is becoming more powerful; many of these devices are running at 300 to 400MHz. So we don't think the CPU is going to be a hindrance."

O'Connell said Katahdin is expected to be generally available by year's end; the company

plans to offer versions for Linux, Nucleus, Palm OS, Pocket PC and Symbian OS. A development license will cost US\$100,000, plus volume-dependent royalties starting at \$1 per unit.

The code name comes from Mt. Katah- The mobile phone din, the tallest mountain kit combines in Maine.

KADA PAIRS WITH TI

Kada and Texas Instruments Inc. in February unveiled a mobile handset development platform that combines the

Kada Mobile Platform configurable J2ME virtual machine with TI's TCS Wireless Application Suite, a set of software running on its TCS 2100 chip set for mobile telephony devices.

According to O'Connell, the reference platform benefits developers by integrating the Java runtime with hardware. "This saves developers from the time and complexity required to integrate a JVM with the device. By having Java preinstalled, you will be able to run CRM, ERP and other enterprise-style appli-

> cations." The TI software also includes GSM, GPRS, WCDMA and Bluetooth communications stacks, a WAP browser, and multimedia and enhanced messaging services (MMS/ EMS) capabilities. The device also will support Katahdin.

The kit includes a Kada's JVM with development board with cables and power supply, Nucleus RTOS and

> Windows-based development tools from TI (www.ti.com) and Kada (www.kadasystems.com). Pricing was not disclosed.



TI's chip set.

News Briefs

PEOPLE

Yvonne Lee joins SD Times as associate editor. Lee previously worked as a senior writer on InfoWorld, senior editor on Web Techniques, and as managing editor at Staffing Industry Analysts Inc. ... Regina Starr Ridley, group president of CMP Media LLC's Special Technologies Group, was laid off in a restructuring of the company's technology magazines, including Software Development Magazine, Dr. Dobb's Journal and Intelligent Enterprise. The STG is being split into two groups: Software Development Media, led by Peter Westerman, and Applied Technologies, managed by Philip Chapnick. Both groups will report directly to COO Steve Weitzner . . . Database archiving tools vendor Princeton Software Inc. has promoted David Kanof to VP of product integration; previously, he served as director of software development. Prior to joining Princeton eight years ago, Kanof was a development director with Boole & Babbage . . . Jeremy Allaire has joined General Catalyst Partners, a private equity firm, as technologist-in-residence. Allaire became CTO of Macromedia Inc. when it purchased Allaire Corp. in March 2001, and remains its "founder emeritus."

STANDARDS

The Java Community Process is offering a second proposed final draft of JSR-152, JavaServer Pages 2.0 Specification . . . The World Wide Web Consortium has updated the working draft of the Web Ontology Language 1.0. The language is part of the W3C's Semantic Web initiative for context-aware Web pages. The group also published working drafts of Document Object Model Level 3 Events, XML Protocol Abstract Model, Scalable Vector Graphics Printing Requirements and XQuery and XPath Full-Text Requirements and Use Cases. In addition, the group revised its VoiceXML 2.0 candidate recommendation to correct schema errors.

J2ME

continued from page 1

defined in the J2EE APIs to include J2ME clients as edge devices. "We're leveraging a lot of technology that has already been created and fitting it into smaller devices. That enables more end-to-end applications, mostly for the enterprise, to be accessible through J2ME devices," he said.

The two main components of the new mobile spec will be small-footprint versions of the Java API for XML Parsing (JAXP), and JAX-RPC, which defines how J2ME devices can execute remote procedure calls. "You can access server-side method calls that have been defined within your J2ME client device," he said, permitting mobile devices to access functionality on I2EE servers, something that was possible before but not officially supported by the platform.

Periakaruppan said that prior to the spec's release, developers looking to deploy Web servicescapable J2ME clients were on their own. "Your development community [will no longer] have to worry about creating the Web

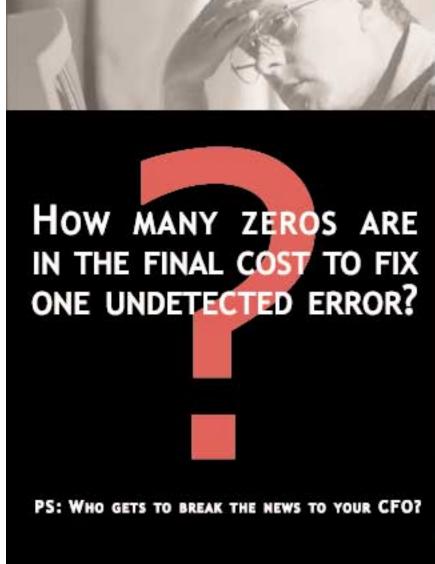
services platform for themselves, either to fill holes or to create new functionality. They can rely on the platform itself to provide a solution. That decreases the amount of time you spend debugging and testing your home-grown Web services communication layers" for remotely accessing back-end data. "Whatever Web services have been created by SAP or BEA [for example] to access enterprise data now become available to J2ME clients."

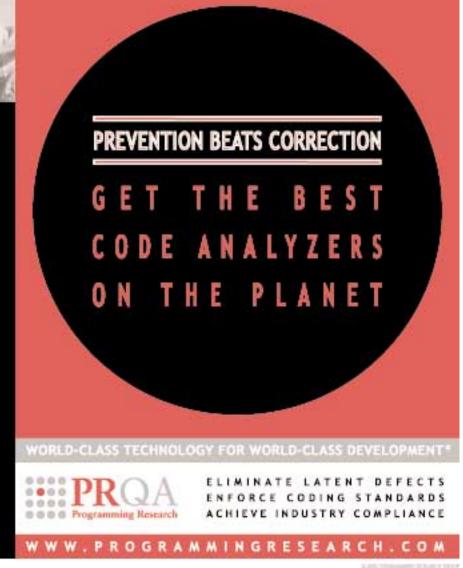
Victor Brilon, Java applications manager for Nokia Americas, said that while it was possible to permit J2ME devices to consume Web services, it was not at all easy. "You're asking developers to roll their own XML parsers and WSDL compilers. The idea behind JSR-172 is to extend enterprise services to J2ME clients and [have Web services as] part of the core platform so developers won't have to reinvent. Fortunately, the J2ME spec allows additional APIs to become part of the core specification."

Of the three expert group members to submit comments with their affirmative votes, Nokia had the most to say, con-

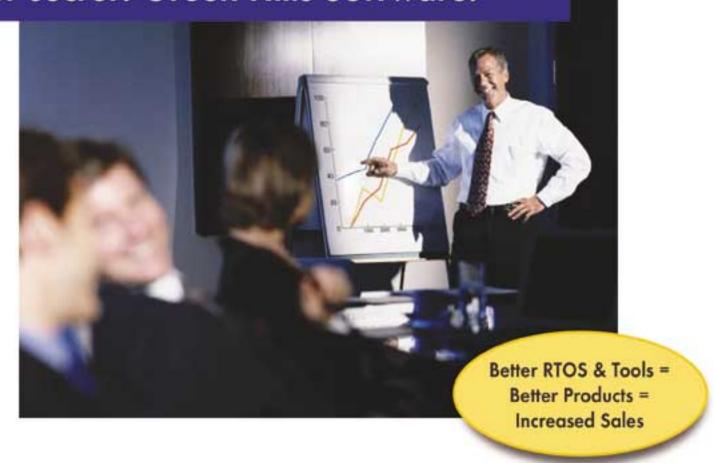
cerned mainly with requisite increases in footprint and device memory. "The memory footprint for ... XML and XMLbased RPC [support] in a MIDP implementation may become too large to support a mass-market CLDC device," read Nokia's comments to the JCP. "This is especially true for devices where Web services client support is just one of many features on the device. In addition, space is needed to store XML documents, for applications using the API, and for manipulating the contents of XML document trees."

Though not yet completed, the reference implementation footprint "looks like it will add about 50K to the platform," Periakaruppan said, and was kept relatively small by limiting its capabilities and inputs. "It's going to be a very primitive parser and will do just what it needs to do," he said. "You may not have all the validation that will happen with a larger XML processor, but that might not be required in this case because we define strict types of XML data," for J2ME devices. The specification can be viewed at www.jcp.org. ■





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LynuxWorks: LynxOS Will Be Compliant With ELC Spec

BY EDWARD J. CORREIA

Following its work in the Embedded Linux Consortium on the ELC Platform Specification that was completed Dec. 31, LynuxWorks Inc.—whose

CEO also is chairman of the ELC-has announced it will comply to the spec in the next release of its operating systems. No time has been set, though, for the ELC-compliant releases.

According to Inder Singh, chief executive officer of LynuxWorks (www.lynuxworks .com), what's more interesting than the planned compliance of his company's Blue Cat Linux is

that LynuxWorks also plans to make its proprietary real-time operating system adhere to the construction guidelines governing Linux-based devices.

"LynxOS will be the first OS

not based on Linux that will be compliant. This highlights one of the benefits of an API spec like this. Because, on one hand, it's a unifying force; any software that operates to that spec will run on any compliant system. On the other hand, it allows for a lot of diversity under that interface, so different systems can be optimized in different ways," Singh claimed. For example, he said, some systems may offer realtime performance, while others may add other capabilities, but all will run apps written to the ELC's platform spec.

Though Singh characterized the required changes to existing LynuxWorks operating systems as relatively small, he wouldn't so much as hint at a time line for a compliant version, saying that any new version is a big deal. "We go though a whole testing and quality process on lots of different platforms. So we don't do new releases lightly; typically about once a year."

LynxOS 4 was introduced last

March, and Blue-Cat RT, its hard real-time version of Linux, in June. Singh said customers also will have a choice of staying with what LynuxWorks' they have, adding Singh declined that pricing will to give a time not increase for line for ELC ELC-compliant compliance. versions.



Singh was characteristically optimistic about what the ELC spec will mean for the embedded industry. "It's the first open multivendor standard we have ever had in the embedded space. The main significance is that for any software product, middleware, tool or anything that is compliant with the specification, developers have the strong assurance that it will work with our product or any other that claims compliance with the platform specification. That helps to expand the market for Linux compatible software, and means customers don't have to write everything from scratch because they will have a growing base and ecosystem of compatible products building around this platform."

The Embedded Linux Consortium itself has not given a date for availability of its promised compatibility test suite.



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Axis XoC Breaks Through Evils of Coverification

Axis Systems Inc. in early March released XoC, an FPGA-based hardware simulator that it claims simulates hardware designs faster than software-based emulators, and which allows developers to verify their applications while hardware engineers simultaneously monitor system behavior.

Jason Andrews, product marketing manager for XoC (www .axiscorp.com), claimed that the device is the first to meld the specialized tools of hardware designers with those of embedded software engineers. "It's all built around the transactions that the CPU will do on the bus. The way we do that is to link the C code or assembly instructions to a view of the hardware design, which is waveforms or signals going up and down in a particular simulation time."

Gary Smith, chief analyst of design and engineering at research firm Gartner Inc., said that companies have been working on the problem of coverification since about 1994. Smith heralded news of the XoC as a breakthrough. The problem until now, he said, has been that electronic design automation (EDA) vendors attempting such products have been too focused on the hardware portion of the design cycle.

"What Axis has done is to look at it from the verification side," Smith said. "That is what allowed them to break through. The other thing that's really important is that EDA vendors tend not to talk to software guys. They come up with hardware-centric solutions and say, 'Oh, by the way, we hand off some C code.'"

Axis' Andrews explained that because embedded software is so dependent on hardware, the causes of application failures are often difficult to pinpoint. "Neither team really knows how to tell the other what's wrong. XoC



The Axis XoC unites hardware and software development teams.

gives developers a correlated way to single-step both sides and see what's happening."

Available now at a cost of US\$414,000 including configuration software for ARM-based designs, the XoC, according to

Andrews, can simulate about 2.5 million gates. Hardware engineers feed it with hardware definition files from their Verilog or VHDL-based software. Software engineers plug in through a JTAG interface.

development boards or software simulators are fine for some projects, they are often slow, and rarely mimic the productionready product exactly. "Those kinds of simulators are not

send packets to a satellite [for example]. The key is to check hardware and software together in a high-speed environment that looks just like it will when you build the ASIC." ■



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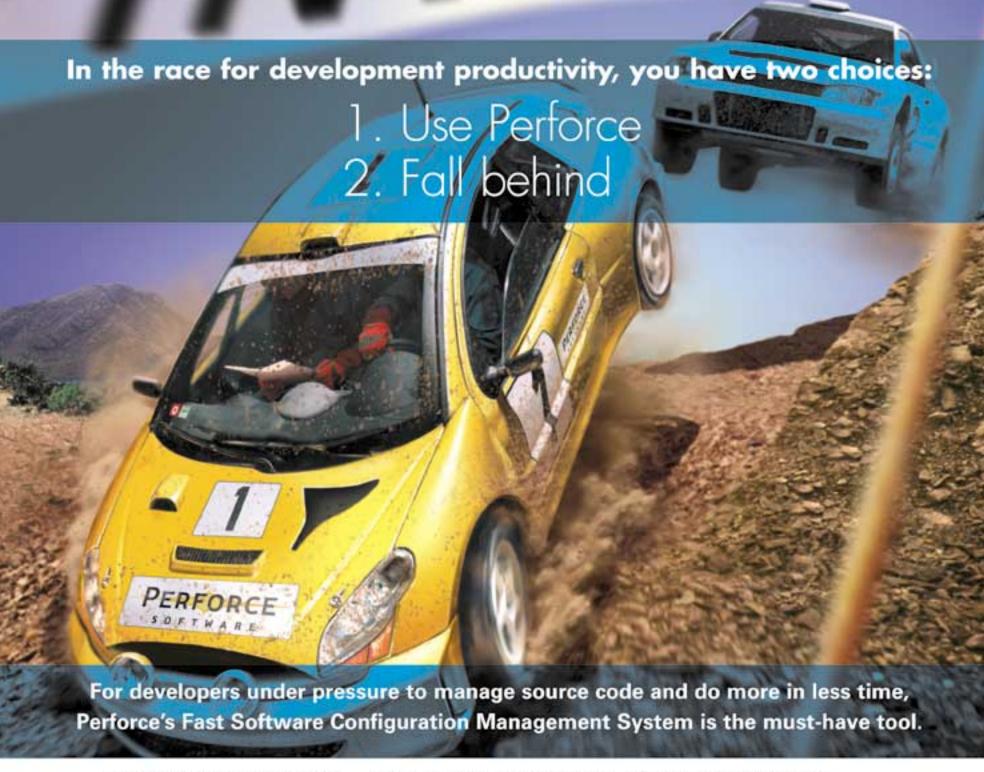
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Software Development Times | March 15, 2003 | SPECIAL REPORT | 27

BY LISA MORGAN

wo important questions surround Microsoft Corp.'s release next month of Windows Server 2003, its replacement for Windows 2000 Server: Will developers adopt it? And if so, when?

On paper, and in Microsoft's spec sheets, Windows Server 2003 sounds great. It's scalable, it's robust, it's secure, and it provides better management and directory functions. In fact, it sounds a lot like Solaris. Except, of course, Windows Server 2003 will include the .NET Framework, and it's not based on Unix, but on Microsoft's historical codebase.

Unlike the commentary accompanying the release of Windows 2000 Server, some major tools providers, notably Rational Software Corp. and Borland Software Corp., are electing to stay silent on the operating system prior to its release. Smaller vendors and analysts are talking, however—and generally

appear to be more confident about the stability of Windows Server 2003 than they were about Windows 2000 Server.

There are good reasons for that.

For one thing, Windows Server 2003's operating system offers a number of incremental improvements over Windows 2000 Server, such as improvements to COM+, Active Directory, IIS 6.0 and simplified management and administration. In theory, this will make the migration a lot less painful than moving from Windows NT to Windows 2000, which required that companies migrate to Microsoft's Active Directory.

However, just because Windows Server 2003 may be a more robust operating system than Windows 2000 doesn't mean that software developers are going to build applications that require or exploit its features. Indeed, some Windows NT shops, particularly those running Windows NT 4.0 with Service Pack
6, also may delay
purchases because
their current operating system continues to work well
enough, at least for now. That is, until
Microsoft yanks support or otherwise
convinces those older customers that
upgrades are desirable—or required.

Dan Kusnetzky, vice president of system software research at IDC, said

Microsoft must deal with two major concerns from enterprises regarding the adoption of Windows Server 2003: .NET confusion and compatibility. Apparently, some developers are still perplexed about whether .NET is an architecture or a product. And since the .NET Framework can be downloaded easily and added to Windows 2000 Server, why move to the new platform?

And then, there's the age-old mantra: If it ain't broke, don't fix it.

"IT people address problems based on priority," he said. "If things are working, you leave them alone unless you like being yelled at."

PAIN OR GAIN?

When Microsoft announced Windows 2000, some Windows NT shops were no less than anguished. There was just too

-Lisa Morgan

THE ECONOMICS OF UPGRADES

One can't neglect the role of the economy when it comes to operating-system upgrades. Microsoft Corp.'s announcement of Windows 2000 practically coincided with the dot-com bust. As a result, Microsoft's Windows 2000 market-share numbers are likely lower than they would have been had the economy remained strong.

That may mean that Windows NT shops may move directly to Windows Server 2003, as the pain of using an old operating system grows stronger. By contrast, Windows 2000 Server shops, particularly those that just purchased licenses, will be among the last to move.

"Shops are cautious [about adopting new operating systems]," said Laura Didio, a senior analyst at The Yankee Group (www.yankeegroup.com). "They don't want to risk downtime."

Still, not all Windows NT customers will automatically move to Windows Server 2003, she said. Some will move from Windows to Linux, Solaris or even NetWare.

The upcoming release of NetWare 6.5 will be functionally equivalent to Windows Server 2003, with the added features of bulletproof reliability and the industry's best directory, she said. Other shops may move to other operating systems for reasons of cost, most notably to Linux.

"On the front end, it costs as much or more to set up a Linux shop in terms of management tools, performance monitor and training. But at the end of the road, you don't have a huge license fee," she said. "Is Linux as reliable and robust as Windows Server 2003? Yes."

much work, training and cost involved in the migration, even if Windows 2000 was a more stable and robust operating system. According to Kusnetzky, Microsoft believes enterprises will adopt Windows Server

2003 based on its enhanced features, primarily improved scalability, reliability and security. That may not happen—at least, not right away—because customers are used to Windows NT Server or Windows 2000 Server and need a business reason to adopt it.

Laura Didio, a senior analyst

at The Yankee Group, concurred. She pointed out that the total cost of ownership and return on investment provided by Windows 2000 Server was measurably better than Windows NT, and yet Windows NT 4.0 is still the dominant operating system.

What about stability? Win-

dows 2000 was more reliable than Windows NT 4.0, requiring 64 percent fewer reboots, but that didn't push enterprises to adopt it. Indeed, by comparison, Novell Inc.'s Net-Ware requires 14 percent fewer reboots than Windows 2000, and Unix requires 300 percent fewer reboots than

Windows 2000, according to a survey by The Yankee Group. Stability and enhancements aside, though, Didio estimated that 60 percent or more of Windows NT 4.0 users will move to Windows Server 2003 because they will eventually be forced to do so by Microsoft's support policies at some point, Microsoft will pull support and cease updates to that platform.

Paul Hernacki, strategic solutions manager at systems integrator Extreme Logic Inc. (www.extremelogic.com), said his enterprise customers, which number more than 50, are exploring Windows Server 2003 in labs, and plan to migrate to the platform for its feature set and stability. He said that his customers have selected certain applications for pilot programs, which they intend to roll out over the next couple of years.

Brad McCabe, technology evangelist at Windows component vendor Infragistics Inc. (www.infragistics.com), said he

expects his customers to migrate to Windows Server 2003, albeit slowly. Many of his enterprise customers already have Win- Cost considdows 2000 file erations slow and print servers migration, that are operating says Infragisjust fine. These tics' McCabe. clients agree the



operating system is better, but

the costs associated with moving the Windows Server 2003 are prohibitive to them in this economic climate.

KEY WORD: INTEGRATION

After working with the Windows Server 2003 betas, Mike Hamilton, product manager at eHelp Corp. (www.robohelp .com), provider of the Robo-Help help authoring tool, has come to the conclusion that the new operating system will make his job easier. Some other developers seem to concur.

The key word is integration. In the past, Hamilton said he could spend two or three days installing software on a server and then troubleshooting. With Windows Server 2003, he said he can install it and walk away because the operating system, components and the .NET Framework are all integrated the difference being a one-disk

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► continued on page 30

IDC: Want to Lower Costs? Mainframe's the Way to Go

Some beta users of Windows Server 2003 may claim Microsoft Corp.'s new operating system will deliver a lower total cost of ownership than previous versions of the operating system because it's easier to install, deploy and manage,

and it alleviates headaches such as integrating .NET and the operating system.

Want to lower TCO even further? Try a mainframe, suggested Dan Kusnetzky, vice president of system software research at IDC.

In a TCO survey by IDC (www.idc.com), the company discovered that for groups of Staff costs drive 300 to 400 users, mainframes up TCO of distriboffer the lowest TCO while dis- uted PCs, says tributed PCs are the most cost- IDC's Kusnetzky. ly. Midrange platforms, such as

the AS/400 and Open VMS, fall somewhere in between. The cost analysis is counter to what Microsoft and other PC-oriented vendors are claiming. They assert the opposite is true: mainframe development is proprietary and closed while the distributed PC setups are open and extensible.

Kusnetzky asserted the reason distributed PCs cost more—new operating system or not-has to do with developing and training staff, which represents about 50 percent to 70 percent of the total cost. Hardware

> and software represent only approximately 30 percent.

> Still, Microsoft is battling its way deeper into the server market, taking on one competitor at a time. First it was OS/2, then NetWare, and now Unix. With each move, Microsoft takes another step toward the enterprise computer room, which represents not only greater overall market penetration, but also higher margins.

"[Windows] NT 4.0 can handle 70 percent to 80 percent of all workloads, and Windows 2000 can handle about 85 percent to 90 percent," said Kusnetzky. "Windows Server 2003 can handle 90 to 95 percent. If Microsoft is successful, it will put pressure on Unix and mainframe vendors."







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install versus integrating many separate programs.

For example, he said, Windows Server 2003 lets his customers take advantage of a new "Direct Connect" feature in Visual Studio .NET, which provides a URL to a Web service as opposed to shipping APIs.

"Now you can drag and drop calls rather than code API files," he said. "Before I had to manually put in CAB and class files.'

Extreme Logic's Hernacki also thinks the integration of .NET and Windows is key.

First, he said, the "out of the box" integration between Windows Server 2003 and .NET will remove one area of potential development errors (meaning that developers do not have to worry about integrating the two). Second, he said improvements to COM+ interoperability will save

developers from dealing with configuration issues. added that the performance and stability of COM+ has been improved.

Interoperability aside, Hernacki considers Windows Server 2003 a "big improvement" over Windows 2000 in terms of scalability, reliability, manageability, security and directory services. He also says Active Directory is a lot easier

to deploy and more flexible than the Windows 2000 version, which may come as a relief to Windows NT shops that have 2003's onebeen dreading disk install

services.



Active Directory job easier,

the adoption of will make his says eHelp's "If you've al- Hamilton.

ready implemented Active Directory, the move from 2000 to 2003 is relatively simple," he said. "If you're still running NT, you will have to take a lot of the same steps [developers faced with Windows 2000], but Windows Server 2003 is easier to implement."

According to Hernacki, Microsoft has also improved its software testing procedures, spending more time performing in-house tests and on early-adopter testing. He also claimed that Microsoft has made significant R&D investments to improve the software.

However, The Yankee Group's Didio pointed out that the Win-

► continued on page 31

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simple tools for Microsoft developers and DBAs

"Microsoft's biggest black eye comes from security criticisms," said Laura Didio, senior analyst at The Yankee Group, "It's not entirely their fault. It's always the hackers versus Microsoft's dedicated 300 to 400 security experts and patches."

She said that Internet Explorer and Internet Information Server are still vulnerable points in and out of the network, so developers are wise to run checks ahead of time to avoid embarrassing breaches.

Yet, Brad McCabe, technology evangelist at Infragistics Inc., asserted that despite security improvements, Microsoft will likely be blamed for Windows Server 2003 breaches, not necessarily because the operating system has holes in it, but because developers are building holes into their applications.

-Lisa Morgan

WINDOWS SERVER

dows 2003 kernel is still 90 percent the same as Windows 2000.

Both Didio and IDC's Kusnetzky think Microsoft is moving in the right direction in terms of more robust product features and functions, including support for multiple processors and 64-bit computing.

WITHER WEB SERVICES?

Some developers think Windows Server 2003 will help



Extreme Logic's enterprise customers are exploring 2003 in labs, says Hernacki.

ers seem to think that the proliferation of Web services (if that ever happens) may spur the adoption of Windows 2003. And others aren't sure.

spur the growth of Web services. Other develop-

that people are migrating to this type of distributed architecture yet," said Kusnetzky. "It might be a career-limiting move to adopt [Web services] before the standards are finalized."

Kusnetzky said he thinks Microsoft may be pushing the Web services concept prematurely. Some customers don't understand Web services, let alone .NET, and what the integration of .NET means in terms of Windows Server 2003 adoption.

Like past computing architectures, Kusnetzky likens the Web services model to the client/server model in that both, at a cursory glance, appear to address the weaknesses of previous architectures. Yet, neither is always the best choice in every situation.

"Mainframes will stay, client/server will stay, and Webcentric computing will stay. Web services will assist the other three but won't supplant them," he said.

To make Web services practical, management functions must be simplified, security must be increased, discovery and directory services must be built in, and higher levels of reliability must be guaranteed. Naturally, these are the features that Microsoft claims Windows Server 2003 delivers.

THE ADOPTION CURVE

Analysts and developers seem to agree that the adoption of

Windows Server 2003 will likely follow the same type of curve seen in the release of Windows NT and Windows 2000, which were slow to be adopted after their initial releases. If past history is an accurate predictor, many enterprises will stage early-pilot programs to see how the new operating system works

and which applications it is best suited to.

According to IDC's Kusnetzky, some shops will begin building new applications on Windows Server 2003, which will help drive its internal adoption.

Then over a gradual period of time, NT and Windows

2000 servers will be replaced by new higher-performance hardware running Windows Server 2003.

To simplify the adoption of any new operating system, including Windows Server 2003, Kusnetzky suggested standardizing on databases and application environments as opposed to operating systems and servers. Take a cross-platform approach to IT, which will make the adoption of any new operating system less painful, even Windows Server 2003.

"If you start with the operating system, you will have the hardest time," he said. ■

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EDITORIALS

UML and Complexity Management

By the end of this month, it's more than likely that the second version of UML will attain its final form. For some developers and enterprises, the Unified Modeling Language has been a big success story. But will UML 2.0, as envisioned by Object Management Group Inc., extend the reach of formal modeling?

Yes, the UML, and its related Model Driven Architecture, are at home in tightly structured development organizations—typically, those that worry about improving their software quality by ascending the ISO-9000 or SEI Capability Maturity Model ladder, or who are working on very large projects or in specific domains.

However, while there's no formal opposition to UML, and no significant competing modeling language, many developers have chosen to simply ignore it. Perhaps their teams adopt some of its graphical conventions for building use cases, or find a few of its diagrams convenient for white-boarding part of a system architecture.

In smaller domains, or in businesses where development is more casual, formal modeling doesn't occur beyond the software architect.

UML 2.0 will make a difference only if it can simultaneously simplify the language and make apparent the tangible business and productivity benefits of formal modeling. While the new release does clean up the language, it doesn't make it simpler or more appealing.

Unless the next generation of modeling tools can hide the complexity of UML 2.0, formal modeling won't make significant inroads beyond its traditional large-project installed base.

From App Server to Software Stack

 $\mathbf T$ he inexorable consolidation of J2EE-based applications and app servers into single-vendor integrated software stacks continues.

In early March, BEA tightened the integration among the portions of its WebLogic platform, tying its app server, portal and integration servers, and WebLogic Workshop IDE more closely together. The new release includes new orchestration and message reliability extensions that work only when WebLogic 8.1-based applications talk to other WebLogic 8.1 servers.

BEA is certainly not unique at this game. IBM uses proprietary "standards" to discourage customers from mixing and matching offerings from different J2EE vendors. Oracle also uses special features to bind its IDE, app server and database. And of course, Microsoft uses its own APIs and .NET to bind its software stack together.

Sun, meanwhile, pursues its own path. While promising to tighten the links between the various members of its Sun ONE stack, it remains focused on operating-system level integration of its app server, directory, portal and messaging servers, based on Solaris and its own Linux distribution.

While the goals of its recently unveiled Project Orion remain fuzzy, Sun also appears to be planning a price war with Microsoft, going after .NET, Active Directory, Exchange and SharePoint. Sun as your everyday low price leader? That's certainly a creative strategy.

GUEST VIEW

YOUR EXECUTIVES NEED A DASHBOARD

Good managers know how to make good decisions. But no one can make an informed decision without the most accurate and relevant information—which is often difficult to see and extract. Key Performance Indicators (KPIs), not just reams of data, help identify both problems and solutions.

Given the frustration that poorly organized or unfiltered information can cause, it's no wonder that executives are welcoming a new design—the Executive Dashboard—with open arms. Executive Dashboards offer a fundamental business advantage when they provide instant access to a well-defined set of real- or near-real-time KPIs, offer a personalized view for each user (based on role and/or preference) and increase visibility into information that allows executives to gain insights—and take action.

An Executive Dashboard provides a carefully defined set of actionable, current numerical data to an executive or a group of executives to help inform decisions about the day-to-day operations of a business or business unit. The dashboard application can be delivered as a stand-alone Web site, or it can be a component within a portal.

Correctly designed and managed, the Executive Dashboard is becoming a vital tool

for managing enterprises and business units.

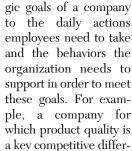
Many companies tout their use of dashboards to show Wall Street that they can respond in a volatile economic environment. That's because when implemented and used consistently, the dashboard provides executives with an "early warning system"

with an "early warning system" for potential financial trouble. Proper information allows executives to take corrective action and avoid being surprised by negative business outcomes.

Upfront emphasis on defining strategic goals and understanding user requirements is integral to creating a successful Executive Dashboard. The key steps in building an Executive Dashboard include:

 Understand Company Goals. Understand the goals of the company to help connect strategic direction with tactical initiatives. Map the rollout of the dashboard to the organization's goals, and use this to guide the choice of features and the timing of their introduction.

KPIs should link the strate-



a key competitive differentiator might select product defect rate to be a critical KPI. Using the dashboard, executives can then identify at a glance plants delivering lower defect rates, and draw from those plants best practices and pitfalls

ERIC

MOORE

Don't neglect to define success metrics for the dashboard itself. Think ahead six months to a year, and determine what will cause you to declare the dashboard a success. Metrics should include the dashboard's impact on key business mea-

for dissemination to others.

LETTERS TO THE EDITOR

STILL A LEAP OF FAITH

In response to Rakesh Agrawal's Guest View "Hippocractic Computing: Protecting our Privacy," [March 1, page 28, or at www.sdtimes.com/opinions/guest view_073.htm] if as a consumer I am willing to trust that a company is recording a "random ranged value" based upon the accurate information I provide, I'm willing to trust that they are keeping my accurate demographic information unassociated with my personal identifying information in the first place. Either way, the consumer still has to trust that the company is obeying their privacy policy.

While "Hippocratic computing" is an interesting idea, I have doubts that it would increase consumer confidence for providing accurate demographic information. Permitting the consumer to choose demographic ranges directly, such as "aged 24 to 30," would require less trust. If the end goal is to increase the percentage of accurate responses, I

feel this method would be more effective.

John C. Ring Jr.

Web and Network
Technologies Specialist
Union Switch & Signal Inc.

WS ABOUT INFRASTRUCTURE

In reference to your Special Report "Driving Web Services," [Feb. 15, page 23, or at www.sdtimes.com/news/072 /special1.htm], I don't agree that corporate-based Web services are years away, as maintained by The Yankee Group. It depends on the infrastructure that is available to an organization. If, for example, they have a J2EE-EJB environment, then (as we have discovered) to exploit Web services standards to extend access to this existing function is very easy; it can be done with a few days' effort. The key is that pre-existing infrastructure.

We have found that UDDI facilities are not a prerequisite. What is a prerequisite is performing a good business requirements review of the

flow, for example, by carefully considering the use cases or storyboards associated with the business problem at hand.

The other area where we see Web services being of value-especially in a heterogeneous and highly decentralized environment, as are most governments and other large organizations—rather ironically is using Web services to keep our silos and yet share information in a very structured and measurable way. Put another way, as silos can be a useful way to guarantee privacy, silos will emerge as a positive thing (for society, HIPPA initiatives and kingdom makers). However, since organizations need to share information for business and strategic reasons, Web services—XML-based and loosely coupled—will likely emerge as a viable way to achieve both ends: secure segregation, but the potential for sharing of information in a transparent and auditable manner.

The problem with Web services is whether the technology and standards will remain open. Patent law, applied

sures (i.e., KPIs), as well as less quantitative measures. Understand the business case so that the dashboard gets funded, delivers value and can continue to evolve

2. Define the User Requirements, Identify and Prioritize Key Metrics. Understanding the user is vital in order to create a successful system. Not all KPIs will be of interest to each user. Nor will each user, based on job function or security restriction, be authorized to see each piece of data.

Interview executives and managers to elicit their specific needs, such as for the type of statistics and reports they really need, and how they evaluate trends and problems. Also, individual users have their own reservoirs of information, such as news feeds and stock market reports. Learning what these preferred resources are and integrating them selectively into the Executive Dashboard is a key step in making the dashboard a repository of decision-making information.

A good understanding of the users, the types of information they use, how they use it, the roles they play within a company, and what their decision-making needs are will help ensure that the Executive

Dashboard is an indispensable tool. Too often, dashboard projects attempt to capture and present all metrics, rather than the most critical ones. The real value in a dashboard is the ability to highlight and focus attention on what is truly important.

3. Design and Build the Solution. Design of the solution begins by uniting user requirements and business goals to develop a framework that makes the most sense to the targeted executive or manager. First a site map is developed that displays how the information on the site is categorized. Then schematicssometimes called wire frames are created. These describe the information to be displayed on the screen, and how personalization and customization will affect that information.

The information architecture should be used as a blueprint to create an information design of the display of data, with emphasis on communicating what the data means. If a KPI portrays a particular trend, how is that specific trend best represented? If an alert has been triggered, why was it triggered, and what will happen if nothing is done to correct the issue? The charts and graphs

that display metrics and KPIs must help executives understand exactly what they are seeing and determine causality.

At the same time, start identifying data sources and the approach used to extract the information. This backend integration will enable the data inputs to be connected to the Executive Dashboard and provide the data the executives will see; the challenge is to find the best technical architecture and data model that defines how various systems and data are put together to deliver the information with the proper personalization, security and performance.

The last step is the development and implementation of the solution and the data migration required in preparation for deployment. Development should be iterative, with selected and meaningful features rolled out early to the target audience. An iterative development process can unearth additional user information—incorporating early feedback when feasible can greatly increase adoption.

4. Measure, Manage and Update. Once the Executive Dashboard has been built and deployed, follow up with users to understand its usage, and to

see that the features and data chosen continue to meet their needs. While full-scale usability testing may not be required, an ongoing understanding of how the dashboard is being used, and how it can retain relevance to changing strategies, markets and jobs, will ensure that the program continues to meet user expectations.

Be sure to capture any return on investment (ROI) from implementing the Executive Dashboard. Quantify how much visibility, understanding and prompt action on KPIs saves or adds to the company's bottom line. Tie the ROI back to the business objectives defined at the beginning of the project.

Finally, organizational support is key to ensuring the success of the Executive Dashboard, and human and system site management should be in place to monitor data sources and ensure they remain up-todate. Over time, data inputs will change, new data sources will become available, and the Executive Dashboard must incorporate these changes in order to remain an indispensable executive tool. ■

Eric Moore is a senior client partner in Razorfish's New York office.

indiscriminately, will probably do more to retard acceptance and deployment of this outstanding technology than will usability. See OASIS XACL TC, for example.

Edwin Lang

Ministry of Health Ontario, Canada

GETTING IN SYNC

Regarding Michel Brassard's Guest View "Maximizing the Return From UML" [Nov. 15, 2002, page 28, or at www .sdtimes.com/opinions/guest view_066.htm], here are some thoughts:

UML does not provide a capacity to model functional behavior that usefully maps to the actual code of a method. Most UML models provide the outlines of classes in terms of method signatures, interfaces, known types references and the like. Sequence and collaboration diagrams are typically considered informative rather than prescriptive. But, even if I can only model the method Dog.Feed(), and if the code implementing that method then ends up containing many

more lines of code that are not represented in the model, this does not mean that the model is out of sync. It simply means that the model is a less complete view of the application than the code method provides. This is the nature of models—they are views at varying levels of abstraction of the subject matter. If I change the signature of the implemented method, then that is out of sync with the model.

The key point is that code becomes out of sync with models not because people implement code methods, but precisely because they change that 1 percent that he speaks of that is both part of the codebase and represented in the model. Though we have thus reduced the nature of the problem to a mere 1 percent of the codebase, the magnitude of that problem should not be underestimated. This 1 percent represents architectural relationships between components, interface signatures, data models upon which code operates and more; it is precisely these elements that are critical to the ongoing maintenance of a software system.

The real issue is not that one can synchronize a UML model of these elements with the code representation. It is instead that one can drive the maintenance of a software system from a consistent architectural viewpoint that takes ownership of these elements. Reverse engineering and insync editing of code and model is an attempt to solve this problem by synchronizing two separate views of a software system: the empirical code and the declarative model.

However, it is our view at Wilde that beginning from the assumption of a necessary synchronization of UML modeling with a codebase that attempts to enforce that architecture is superfluous, given the implicit correspondence of the two views of the system architecture that the attempted synchronization implies. It is far better to specify an architectural view where it is most readily captured (which we believe is the declarative UML model) and to specify behavior

where it is most readily captured (implemented in code).

Such a separation is possible—in fact, we have implemented just such an approach in Wilde 1.0.

The benefits that derive from this separation point essentially to a vastly more flexible development methodology and resulting system structure with all the ROI that follows from this capacity...which is the point of engaging in modeling in the first place.

Stephen Barrett

Wilde Technologies

WHAT DO YOU THINK?

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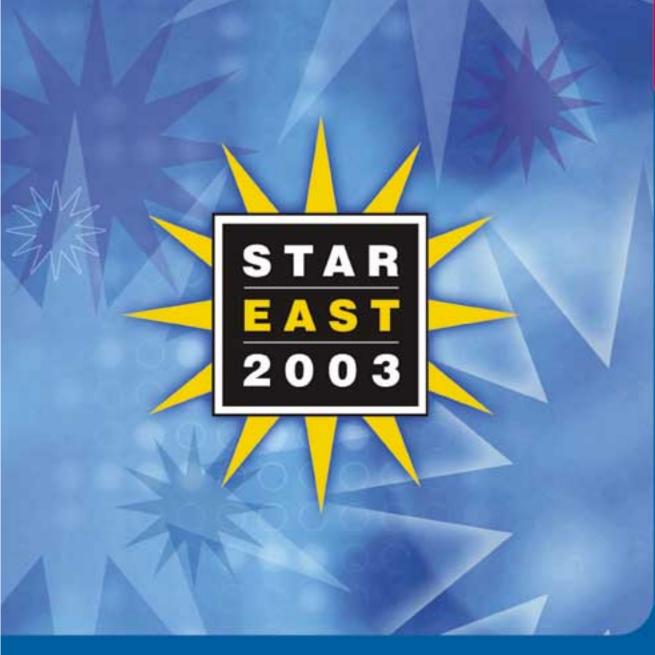
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MIDDLEWARE

WATCH

CANDLE AND MQ BURNING BRIGHT

ong before Java made middleware popular again—or more specifically, before Java Message Service did—IBM's MQ Series messaging middleware was a boring, mainframe-oriented technology. In addition, it was remarkably dependable and supported on just about every platform an enterprise was likely to encounter. With these credentials, it pushed its way to overwhelming leadership in the middleware market. Rivals like TIBCO, Talarian, WebMethods and others were playing skittles in a corner, while MQ Series plumped in the rest of the playground.

That was then. Today, MQ Series has a new name, WebSphere MQ. You've probably seen the new name already, as well as the renaming of IBM's VisualAge tools as WebSphere Studio. Anything that smacks of enterprise-oriented software is being tagged with the WebSphere moniker. Such tactics actually do work. In a few years, most people will view the products as a single integrated product set, having forgotten that they have little of a common heritage. Consider how successful IBM has been at selling two completely different databases using the DB2 name. How many people remember that the Windows NT/2000 version is a product wholly different from DB2 running on mainframes? But I digress.

Whether you call it MQ Series or WebSphere MQ—for this column, let's just call it MQ—the middleware is a product whose position looks pretty much the same as its progenitor: enormous market domination, while marginalized competitors (TIBCO cum Talarian and a gaggle of JMS vendors) gather in the corner of the playground and try not to be run over.

WebSphere MQ has held onto this position by the usual traits you associate with IBM and the old MQ Series: reliability, ubiquity and performance that are good enough for enterprise work. These traits are backed up by world-class support.

ANDREW Despite years of hogging the top position, though, WebSphere MQ has attracted scant third-party tools. Comparatively few companies sell products that help manage the middleware, or address issues typical at its deployment sites. At February's Transaction and Messaging trade show in Las Vegas—a show that caters strictly to customers of IBM's MQ and CICS product lines—only 25 vendors had products to show. The usual mainframe suspects were there: BMC, Computer Associates, NEON and others. Candle was also there. This Los Angelesbased vendor dominates the market for MQ Series add-in tools, with various ana-

lysts attributing roughly a 68 percent market share in its niche.

Candle's offerings include numerous packages that cover nearly the whole range of MQ-oriented issues, from design to enterprise deployment and implementation. A particular strength is in tools that help lay out and design MQ systems within the enterprise. You'd think that this would be fairly easy to do. Write your apps to the API, send messages to the other apps and off you go. But as is so

often the case, simple choices have all kinds of ramifications that make them more complex.

Typical problems are low performance caused by bad design decisions. These can include persisting messages that should not be persisted, using batches of the wrong size, and numerous other factors that might not be evident

right away. Other configurations can lose messages by sending them inadvertently to disabled queues or full queues. Candle's configuration tool will validate a design by making sure the design holds together properly and that the necessary elements are all in place.

In addition, Candle tools will help with one of the critical issues that now seemingly dogs every enterprise IT technology: security. Candle can provide end-to-end encryption, which is particularly important when messages travel over the Internet, as to an overseas branch. Since IBM's MQ software is used at two-thirds of the top 100 banks, this issue has particular relevance.

Candle also implements tools to verify the health of the messaging systems. In a sense, these tools act like network monitors and make sure nodes are running. It uses an SNMP-like protocol. Curiously, the one thing Candle does not do is trace a message along its path. This is taken up by eSleuth, a product formerly sold by Bristol Technologies, which I discussed years ago ("Tracking Down Lost Messages," Aug. 1, 2000, page 29, or at www .sdtimes.com/cols/middlewatch_011.htm). eSleuth is now part of Bristol's Transaction Vision product, a more comprehensive tool for the management and diagnosis of message routing and data flow.

Between Candle's product set and the debugging and diagnostic tools from Bristol Technologies, IT sites are enjoying the traditional staple of IT infrastructure: middleware that passes the data along a reliable, predictable and fairly quick transport. It's boring—just the way IT likes it. And as I have predicted in my past few columns, if occasionally connected computing continues emerging as the new paradigm for client-side computing, middleware such as WebSphere MQ is likely to start showing up on endpoint devices as well.

Andrew Binstock is the principal analyst at Pacific Data Works LLC.





MISSION CRITICA





SOFTWARE DEVELOPMENT BEA Upgrades Java Software, All Versions 8.1

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NET WATCH

LARRY

THE TRUSTWORTHINESS GAP

The more I think about the Slammer worm, the more chilled I get. My hosting provider was on one of the more hard-hit segments, and my domain was unreachable for 40 hours. While I didn't lose significant revenue, others who relied on the previously unimpeachable service quality of that provider had significant losses. While I spent the weekend waiting for my site to respond to pings, I took a look at the Slammer worm and buffer overrun exploits in general.

What I saw scared the pants off me: The effects of the Slammer worm, which took 10 minutes to make major portions of the Internet unreachable for several hours, were absolutely nothing compared with what they might have been. Forget about stocking up on duct tape and plastic sheeting—buffer overrun exploits represent an economic vulnerability of stunning magnitude.

Buffer overrun exploits are in no way unique to Microsoft products. There are many, many vulnerable systems on the Web, including all but the latest versions of the increasingly popular CVS version control system. Once the machine has been compromised at the assembly-language level, the security model of the operating system or API is useless. Amazingly, Slammer was a mere 376 bytes and the fundamental technique of executing arbitrary code after an overrun is as simple as "IMP ESP."

Such exploits are not possible directly within the .NET Common Language Runtime or the Java Virtual Machine, but at least theoretically these systems may be vulnerable to second-order attacks in which malicious data is passed to managed code that in turn interacts with vulnerable native code; again, once the exploit is in place, the security model of the managed environment is entirely bypassed.

While such second-order vulnerabilities should be rarer than vulnerabilities stemming from C and C++ code, the increasing number of such systems on the Internet makes the eventual discovery of such a weakness inevitable.

The Slammer worm appears to have been based on proof-of-concept code released by David Litchfield of Next Generation Security Software in accordance with the philosophy that full disclosure of vulnerabilities is the most beneficial route to reducing those vulnerabilities. I would be skeptical of that philosophy were it not for the fundamental simplicity of the exploit technique and that the very existence of a patch directs rascals to the exact location of the vulnerability in unpatched systems.

Slammer's unique characteristic was the speed with which it propagated. In the first minute of the attack, the number of infected computers doubled every 8.5 seconds. In three minutes, it reached 55 million attacks per second. In 10 minutes, it had infected 90 percent of the ultimately compromised computers and the congestion caused by the attack had effectively shut down major portions of the Internet.

But here's the scary part: Slammer was benign. After gaining total control of the infected machines at the assembly-language level, Slammer simply propagated itself in a tight loop.

Slammer played out in a particularly inopportune way for Microsoft. The week prior had been the first anniversary of Microsoft's ballyhooed "Trustworthy Computing" initiative, and Microsoft had just sent out an e-mail in Bill Gates' name that began, "As we increasingly rely on the Internet to commu-

nicate and conduct business, a secure computing platform has never been more important."

Admissions by Microsoft that Slammer had played havoc with its internal systems didn't help (and incidentally implied a breach in its firewall, since Slammer spreads to random IP addresses via UDP).

The patching process was difficult, requiring 170MB of downloads in three patch files and helpful dialogs such as: "A strong SA password is required for security reasons. Please use SAPWD switch to supply the same. Refer to readme for more details. Setup will now

exit." In short, the gap between the rhetoric of trustworthiness and reality was impossible to ignore.

Microsoft correctly pointed out that a patch for the vulnerability had been available for months, but this just made it clearer that relying on users to install patches is not a solution. What's needed is a cross-platform, push-based standard for distributing emergency alerts and triggering appropriate behavior. There needs to be a standard port (911?) at which listens an OS-level daemon with the ability, at the least, to shut down network services.

Obviously, such a service would itself be targeted for attack; asymmetrical cryptography for message authentication, and strict standards about the scope and source of messages, would have to be developed lest the service become anything more than a noadministration fuse box.

That's the awesome conclusion that I've come to—that Internet-connected computers need an "off" switch that can be thrown by sanctioned third parties. Ceding that kind of control is anathema to those rightly suspicious of powerful interests, but the alternative is to leave the engine of the digital economy open to devastating attack.

Editor's note: We welcome back Larry O'Brien, our former Web Watch columnist, who now returns as the writer of Windows & .NET Watch. Larry takes the helm from Oliver Rist, who remains a contributing writer to SD Times.

ECLIPSE, NETBEANS AND JSR-198

In this corner, weighing in at a net worth of over \$22 billion, is the Java IDE challenger: IBM with Eclipse and its friends. And in the other corner, the founder of the cause, the Java Jock, weighing in at a net worth of just over \$3 billion and the still-undefeated champion: Sun with Net-Beans. Are you ready to rumble?

If money were everything, it would be no contest. But it's not. Sun still leads the Java community, even though there's more grumbling than ever from Java followers. What may tip the scales, though, is that Eclipse, lead by IBM, is gaining popularity quickly in the IDE fights.

Partly, I think that's happening because of purely technical reasons. In NetBeans, cross-platform interoperability is the name of the game. With Abstract Window Toolkit (AWT) and Swing, an IDE not only produces code that works on multiple platforms, the IDE itself, right down to its windows, works and looks the same whether you're running on a top-of-the-line Sun Blade 2000 Workstation or a pokey Linux Pentium box.

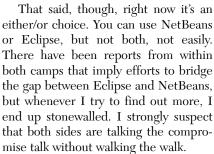
As has always been the case, though, with such blanket interoperability, you have to pay a cost in memory size and speed. Even developers who *like* Net-

Beans tell me that it's a slow pig that needs every clock tick it can get and as much memory as you can jam onto the motherboard.

Eclipse, on the other hand, isn't 100% Pure Java. Its graphics infrastructure is provided by the Standard Widget Toolkit (SWT), which uses the GUI provided by

the resident operating system. It works a lot faster, but you're not going to be able to step from Eclipse on an IBM pSeries system running AIX to a Windows PC without having to look two — make that three—times, to make sure that the IDE framework really is still Eclipse.

The differences are more than skin-deep. I've also been finding that hard-core coders, who are perfectly happy to polish up their projects with EMACS, much prefer NetBeans over Eclipse. Truth be told, what they really want is xTerms, but if they have to use a graphical development environment, NetBeans is the one they'll use. Enterprise developers, on the other hand, tend to prefer Eclipse. While these two groups argue like cats and dogs, once you get past the religious wars, they have the same goal: producing good programs as quickly as possible.



Except, that is, for Oracle. Oracle was,

and still is, a longtime supporter of NetBeans, AWT and Swing. You don't have to take Oracle's word for it. You can see it in JBuilder. But, then in November of last year, Oracle joined Eclipse and at about the same time proposed JSR-198, the Standard Extension API for Integrated Development Environments, to

the Java Community Process.

JSR-198 is based on AWT and Swing. Now, a cynical person would say that Oracle's executives were only doing this to let traditional Java programmers know that they were still keeping the NetBeans faith even though they had joined the Eclipse board. In short, Oracle was trying to have its cake and eat it too.

I don't think the cynical reason is the right one. Oracle realizes more than the other Java IDE players that C# and

Visual Studio .NET are the real challenges to Java and its IDEs. Therefore, Java needs a way for independent software vendors to easily use either Eclipse or NetBeans for their development.

And part of that, of course, is to let development-tool ISVs write add-in programs that will run on either framework without modification. In short, if JSR-198 is broadly accepted, tool developers wouldn't have to write multiple versions of their add-ins for their stuff to work with either IDE.

This is a great idea. Will it lead to a unified IDE for Java? No, it won't. IBM and Sun don't want to agree with each other for competitive reasons that go far beyond development tools. Besides, IBM wants to expand Eclipse beyond just Java.

That said, if JSR-198 is adopted, it will make any Java developer's life a lot easier, since it means that they'll be able to use almost any third-party tool regardless of whether the developer is using Eclipse or NetBeans. It may not be Java IDE unity, but a good JSR-198 bridge may be the real knockout in the Java IDE fights. ■

Steven J. Vaughan-Nichols is editor of Practical Technology (www.practicaltech.com) and has worked as a programmer for NASA and the Dept. of Defense.



A ONE-ACT PLAY

INDUSTRY

WATCH

DAVID RUBINSTEIN

ne way you can tell a regulated industry, Jonathan Zuck was saying, is that you can name everyone in it. Only big businesses, with big staffs and even bigger revenues, can afford to be regulated. Look at the phone company before deregulation, and now at all the regional phone companies that have sprung up since.

Zuck is president of the 5-year-old

Association for Competitive Technology, a Washington, D.C.-based high-tech industry trade group that monitors legislative and judicial regulations and quantifies their impact on small technology companies, which is where Zuck asserts the drivers for innovation reside. "Policies will get made with or

without software companies," he said. "Before you know it, it can cost more to do business than you can make.'

The key, the association believes, is to protect small businesses, which often are the most impacted by legislation, as they lack the wherewithal to implement statutory changes. According to ACT, small businesses "generate most of the job growth and innovation in our economy, and are disproportionately affected by regulatory and legal burdens."

Zuck's role at ACT (www.actonline .org) is to help legislators understand the impact of any pending regulations on the technology industry, to lobby congressional leaders, and to help educate them. "There's some geeky stuff that requires some transparency," he said. "What's a cookie? What's DRM?"

He told of an effort by Sen. Ernest F. Hollings, D-S.C., chairman of the Senate Commerce Committee, to require that all hardware and software would have government-mandated Digital

Rights Management technology built in—an effort Zuck likened to building copyright laws into a pen.

DRM is just the technology, Zuck explained on Capitol Hill; it has nothing to do with copyright law. "It was a ridiculous piece of legislation" that, while prospects of passage remain small, has created a division between the technology and "content" industries such as movie and recording studios.

> Begun in 1998 by a number of executives from such software companies as ComponentSource, Sheridan, Symantec and Visio, ACT today tries to protect the environment in which small businesses operate. ACT is built upon two essential ideas: that consumers, and not governments,

should pick the winners and losers in the marketplace; and small tech businesses thrive on innovation, not regulation and litigation. Today, the organization claims to represent about 3,000 small software developers, integrators, consultants and training firms, but does boast two big players, Microsoft and Symantec, among its numbers.

When looking at a proposed piece of legislation or impending court decision, Zuck said the rubric has to be, "Does it help or hurt small businesses?"

To help define that, ACT created the TEQI, or Tech Environmental Quality Index. In the index, ACT can assess the potential impact of a regulation on the industry, and assign it a number based on its probability of becoming enacted. As seen with the Hollings proposal, legislation can have an impact on the industry even if it never passes into law.

probability of an action—a bill being introduced, or going to committee, pass-

ing a floor vote or being signed into lawand assigns a value. Then, the potential impact also is determined and assigned a value from -1 to 1. Multiplying the two values gives the TEQI score that is used to move the overall index higher or lower.

The TEQI has fallen from 100 to 90 in the past two years. "The environment is becoming more regulatory, making it harder for small companies to do business." Among recent actions to negatively impact the index were the blockage of the Echostar-Hughes merger, which was seen as a setback for nationwide broadband, and barriers thrown up by traditional retailers to block online retailing. In the courts, ACT is watching for attacks on the Digital Millennium Copyright Act, which could dictate the future of intellectual property protection.

Zuck, a former programmer who knew his way around Washington, has become a Beltway insider. He described his role with ACT as "kind of like jury duty. Once you get there, you realize the importance of it. It's not as straightforward as programming, but it's good to be in a position to make a difference for the whole industry."

When he's not in Washington, Zuck traverses the country, talking with small software company owners to get a sense of how what's happening in Washington and in the courts is affecting them. He can give them a voice on Capitol Hill, relaying their sagas back to congressmen and senators on the commerce and judiciary committees, the two panels Zuck identified as having the most regulatory impact on small business.

"They need to know how Joe and Marie running a custom software shop in Chicago would be adversely affected by their actions," Zuck said. "You always need stories to tell." ■

David Rubinstein is executive editor of SD Times.

DATA WATCH

BUSINESS BRIEFS

Sybase Inc. has finalized its acquisition of Avant-Go Inc., a mobile enterprise software provider, for US\$1.029 per share of outstanding AvantGo stock. A majority of AvantGo employees will be retained in the Sybase iAnywhere Solutions division, the company announced . . . Merant International Ltd. has acquired EssentialSET Enterprise process framework from consulting firm Software Productivity Centre Inc. Terms were not disclosed. Merant is incorporating the technology into its new Best Practices for Change Management solution, demonstrated last month at the Software Engineering Process Group show in Boston. The bundle includes EssentialSET Enterprise, PVCS Dimensions change management tool, and professional services . . . The SCO Group, formerly Caldera Systems Inc., reported a net loss of US\$724,000 for its first quarter 2003 ended Jan. 31, a major improvement over the loss of \$11 million for the same quarter a year earlier. Revenue however, declined to \$13.5 million from \$17.9 million reported for the first quarter last year . . . Novell Inc. has reported a 6 percent revenue decline to US\$260 million for its first quarter ended Jan. 31, compared with \$278 million from a year earlier. The company showed a net loss of \$12 million for the period, or 3 cents per share, compared with earnings of \$8 million, or 2 cents per share, from the first quarter 2002. ■

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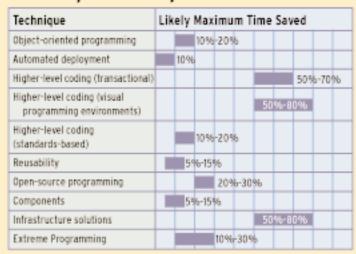
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For a more complete calendar of U.S. software development events, see www.bzmedia.com/calendar. Information is subject to change. Send news about upcoming events to events@bzmedia.com.

The index is designed to gauge the

The Programmer-Productivity Effects Of Today's Techniques



urca: "Programmer Productivity Reconsidered: Reusablity Considered Harmful-Refactoring Nat,

www.aberdeen.com

Improving programmer productivity for many years has been the Holy Grail of development technologies, and over the past five years, reusability has been the method of choice. However, evidence increasingly suggests that encouraging reuse in today's tool sets is having little positive effect on productivity—and sometimes even a negative effect.

The problem, Aberdeen Group Inc. suggests in a new report, is that development-tools suppliers and users alike are taking too narrow a view of programmer productivity, mistaking a possible means (reuse) for a goal (faster, repeated delivery of software value-add to the customer). IT buyers, it recommends, should focus on tools that have proven able to deliver order-of-magnitude improvements in programmer productivity in particular situations, improve the end result, or speed upgrade of existing programs, such as refactoring.

Refactoring has a slightly negative effect on project time in initial application development. From then on, however, refactoring can have a major positive effect on programmer productivity.





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